

THE LARYNGOSCOPE.

VOL. XVI.

ST. LOUIS, MO., MAY, 1906.

No. 5.

ORIGINAL COMMUNICATIONS.

(Original Communications are received with the understanding
that they are contributed exclusively to THE LARYNGOSCOPE.)

SOME AFFECTIONS OF THE LIPS, MOUTH AND TONGUE, AS SEEN BY THE DERMATOLOGIST.

BY WILLIAM S. GOTTHEIL, M.D., NEW YORK.

(Serial Paper—First Part).

I propose in the following to record some of the more unusual affections of the buccal cavity that I have seen during the last few years. Many skin and venereal affections show manifestations on the lips, tongue, tonsils, pharynx and general mucosa of the mouth, and the dermatologist and syphilographer see them frequently; and not a few of the more serious dermal affections have their first manifestations in these regions. The cases are taken from private practice, as well as from my hospital and ambulant services; and as the affections in many instances are regarded by the laity as reproachful, it has been necessary to so arrange the illustrations as to render the pictures unrecognizable. This detracts, of course, greatly from their appearance.

Case 1. *Cellulitis of the lip, diagnosed as chancre* (Figure 1). —This patient was an elderly woman who was sent to my clinic by her physician with a probable diagnosis of chancre, though as the note that she brought with her said, there was no history of infection in her family, nor any reason to suspect the patient. Now it cannot be too often and too forcibly insisted on that if there are any factors in the diagnosis of lues that are doubtful and misleading, they are the family and personal histories. In fact, it is a question in my mind whether they are not more often a hindrance than a help in arriving at a right conclusion. Not only is there the natural and

almost excusable tendency to falsification in regard to diseases that are regarded as disgraceful, and are often contracted under non-avowable circumstances; but infection often occurs quite innocently and quite unwittingly, and the symptoms are often so slight that patients are telling the truth when they deny all knowledge of it. I never even inquire into the history of a suspected venereal lesion till after I have made the diagnosis, and often not then; and I regard the information elicited, whilst satisfactory if confirmative, as of very little value indeed if opposed to the objective evidences.

The patient showed a circumscribed swelling of the left upper lip that fully justified the provisional diagnosis of an initial lesion. It was moderately hard all over; and in its external and most prominent portion there was a more localized induration that was suspicious, though not characteristic. The tumor involved the entire thickness of the lip; it was brownish-pink in color, not tender, and sharply limited, and there was a doughy swelling of the submaxillary gland on that side. The tumor had been present about two weeks; it had begun at the point that was now its most prominent part, and there were absolutely no other than the local symptoms.

The treatment to be pursued would of course be entirely dependent on the diagnosis, and in considering that certain things could be at once excluded. Malignant disease, coming naturally to mind in a patient of rather advanced age, was disposed of by the absence of pain and ulceration, and the short duration of the affection. A gumma of the lip was more likely; but this would almost certainly have broken down before it reached such a size, and it would not have grown so rapidly; and the absence of all luetic stigmata elsewhere in the patient confirmed me in rejecting this diagnosis. The possibility of its being an initial lesion was less easily disposed of. But the induration was not quite wooden enough, and though fairly circumscribed, was not quite as sharply limited as we expect to see it in the loose tissue of the lip. The absence of surface erosion was also against this diagnosis; for though the chancre is always essentially a tumor, and ulceration is always a mere epiphenomenon, the tendency to surface growth in this affection is so great, and the chances of superficial traumatism in this location is so great, that some breaking down would be almost inevitable. The condition of the adjacent lymph glands was entirely indecisive, since in elderly people the adenopathy accompanying the initial lesion often lacks the characteristic hardness, and is indistinguishable from that due to other infections. On the whole, therefore, I was able to decide against a chancre.

There remained then the diagnosis of a cellulitis, a simple deep-seated pus infection, with the unusual features in this location, of sharp limitation, hardness instead of doughiness, no history of infection or visible point of entrance of the virus, and no constitutional symptoms. This was finally my diagnosis and the result confirmed its correctness. In a few days the center of the mass began to soften a little, and a free incision and drainage was all that was required to effect a cure.

Case 2. *Oedematous chancre of the lip, resembling a cellulitis* (Figure 2).—This case for which I am indebted to the kindness of Dr. I. P. Oberndorfer, of this city, and which was shown at the Manhattan Dermatological Society last winter, is of interest in connection with Case 1. They show marked superficial resemblances to one another.

The patient was a young man who had had a slowly growing tumor of the lip for three weeks. The entire external three-fourths of the lower lip was tumified and projecting. Over the center of the mass was a small round crusted excoriation. There was a suspicious, though not quite characteristic hardness in the central area of the mass and under the excoriation, and surrounding this was a softer, more oedematous infiltration that involved most of the lower lip. The submaxillary gland on the right side was very large and hard, but painless; it is distinctly visible in the photograph. The points of distinction from a simple cellulitis were the extensive wooden and painless involvement of the neighboring gland, the painless and eroded central induration of the tumor, and the general appearance of the lesion. Though there were absolutely no other signs of lues present at the time, the diagnosis of chancre could be made with reasonable certainty. The event proved the correctness of the diagnosis, since the patient, during the short time that he remained under Dr. Oberndorfer's observation after that, showed unmistakable corroborative evidences of systemic infection.

Case 3. *Gumma of the lip* (Figure 3).—The patient was a vigorous healthy man of 31, sent to me by his physician on account of an exulcerated tumor of the lower lip that had been present for five months. It had begun as a small nodule on the lower part of the left lip, near the vermillion border. It had steadily increased in size, and at times, especially under the treatment that had been instituted, it had broken down to heal up again superficially under milder local applications. Among other things chemical cauterization had been

used. Whilst no definite diagnosis had been made by the attendant, there had been no thought of its being luetic for, as the doctor told me, the patient denied all venereal history, had been perfectly healthy otherwise, had been married for a number of years to a perfectly healthy wife, and had several blooming children. The chief fact, however, that to the attendant's mind excluded lues entirely was that there was no history of abortions on the part of his wife during his early married life.

Now I do not deny the possible value of a history of repeated abortions, otherwise inexplicable, as an indication of syphilitic infection. But like the personal history of the patient, it is corroborative evidence only, and has a positive but not a negative value. There are other causes besides syphilis for repeated miscarriages. And they may not occur even when the father is undoubtedly syphilitic. There is comparatively little likelihood of their appearance when the paternal infection is an old one, or when it has been vigorously treated. On the other hand the personal manifestations of tertiary syphilis may occur at any time *post infectum*; and whilst appropriate treatment during the active stages of the disease is our best safeguard against their occurrence, it is unfortunately by no means an absolute guarantee against them.

Here again, therefore, it was necessary to make a diagnosis from the objective symptoms alone, and to recognize the fact that this might be corroborated, but could not be upset by the history. The entire left half of the lower lip was swollen, and in the center of the mass was a deep, ragged, oval ulceration three-quarters of an inch in size. There was no cartilaginous hardness to the base and margins of this ulcer; the tissues in which it was situated were moderately consolidated, not very sharply limited and felt rather like an inflammatory induration than a distinct tumor formation. The submaxillary glands showed only the doughy tumefaction and slight tenderness incidental to lymphatic absorption from any ulcerative lesion. There was absolutely no mark anywhere on the patient's body of past or present lues.

The differential diagnosis in this case was evidently between three conditions. The growth might be an exulcerated sclerosis, a broken down gumma or a carcinoma. The possibility of its being the first of these, a sclerosis or initial lesion was soon disposed of. The general appearance of the lesion, and especially the deep ulceration and the absence of characteristic induration, the non-appearance



Fig. 1. Cellulitis of the Lip, diagnosed as Chancre.



Fig. 2. Edematous Chancre of the Lip.



Fig. 3. Gumma of the Lip.

THE
JOHN CRE
LIBRARY

of other syphilitic symptoms in the glands, skin and mucosa, was entirely against it; the persistence of the lesion for five months was confirmatory of this opinion. The differentiation as between carcinoma and gumma was more difficult. Against carcinoma was the entire absence of pain and of the cartilaginous border and base that that tumor would almost positively have in the lip, the non-involvement of the cervical lymphatics, and to some extent, the age of the patient. On the other hand the entire appearance and course of the lesion was that of a tertiary syphilitic infiltration, and so I told the patient. Of course, he was astounded, maintained that it was impossible, that he had never had syphilis and the like. It took much labor to convince him that infection might have been acquired innocently, and without his knowledge.

He was given his first intramuscular injection of 6 drops of the 10% salicylate of mercury-albolene suspension that I employ on December 28th, 1904, and was put on 15 drops of a saturated (100%) potassic iodide solution t. i. d., to be increased 3 drops at each dose. On January 5th, only one week later, he admitted, as was very evident to me, that the ulcer was cleaner and smaller. He was given another 6-drop injection, and was given up to 150 drops of the iodide solution daily. On January 11th, he got his third similar injection, iodide 300 drops daily, which he stood very well. The ulcer was half its former size, and the swelling of the lip had diminished markedly. He was told not to increase the iodide dosage further, as it seemed unnecessary. On January 18th, he got his fourth injection, and on January 26th as the swelling was all gone and the ulcer almost healed, he was given only $4\frac{1}{2}$ drops, and the iodide was reduced to 75 drops t. i. d. By February 2nd, the lesion was entirely well and on that date, as well as on the 9th, 16th and 23rd of that month, he was given the small injections, the iodide by this time having been reduced to 15 drops t. i. d.

There was thus a notable improvement in the patient's condition in the very first week, and after a single intramuscular injection of the insoluble mercurial salt. The promptness and reliability of action of the drug when administered in this way, and no matter at what stage in the luetic disease, is one of the many advantages of the treatment. As I have elsewhere described the method at length, I shall content myself here with the statement that I firmly believe that it is the routine method that should be employed in the great majority of all the cases of syphilitic, heredo-syphilitic and parasymphilitic disease, and I believe that this is rapidly coming to be the

opinion of all those who busy themselves especially with the malady. In this case, in two weeks and after two injections, the lesion had diminished one-half in size, and in four weeks and with five injections it was cured.

Of course the patient was informed of the necessity for prolonged treatment of his unsuspected and neglected infection, but like so many others he became careless when relieved of his present difficulties, and after the 9th injection I saw him no more. He had in all 43 drops of the salicylate suspension injected, being 4.3 grains of the salicylate of mercury, equalling about 2 grains of metallic mercury. And he had taken altogether 6500 grains of iodide of potassium.

144 W. 48th St.

(To be Continued.)

Oedematous Swelling in Acute Septic Inflammations of the Neck and Throat, Dispersed by Adrenalin Chloride.—T. R. FRENCH (Brooklyn).—*Brooklyn Med. Journ.*, February 1905.

The beneficial effects of Adrenalin Chloride solution were observed in a case of septic inflammation of the throat in a male patient. A 1 to 5,000 solution was applied every two hours during the night and day, to an oedematus uvula. The swelling disappeared by the next day, though a high-grade inflammation still existed. This treatment was stopped for the day, but on the following day difficulty in swallowing, laryngeal stridor and labored respiration appeared. The left side of the neck was considerably swollen and on palpation was found to be exquisitely tender. On laryngoscopic examination marked oedema of the epiglottis, arytenoid cartilages and ary-epiglottic folds were observed. Nothing abnormal was found in the urine.

The treatment consisted of free application every hour of a 1 to 5,000 solution of adrenalin chloride, by means of a cotton-wrapped laryngeal applicator. After the fifth application, the laryngeal stridor had disappeared. On the seventh day the oedema had nearly disappeared from the cavity of the larynx, without the formation of pus. The author remarks that the same treatment has acted very happily in about a dozen cases of a similar nature.

LEDERMAN.

SOUNDS FOR THE EUSTACHIAN TUBE.*

BY SIDNEY YANKAUER, M.D., NEW YORK.

The special features of these instruments lie in the material of which they are made, in their shape, in the markings by which the distance they are introduced can be measured, and in the special methods of treatment which these advantages enable us to adopt.

They are made of a strand of catgut, surrounded by an elastic resinous substance which resists the action of boiling water, so that they can be sterilized. This covering is soft and smooth, and the sound is very flexible, so that it follows the curves of the Eustachian tube with greater ease and consequently with less pain than the usual form of bougie.

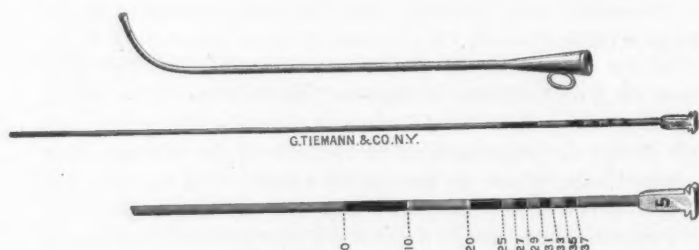
The sounds are of uniform calibre throughout except at the tip, which is tapered to such a degree that the tip of each sound is slightly smaller than the shank of the next smaller size. They differ from the ordinary bougie in that the bulbous extremity is absent. The latter is useless for the purpose of dilatation, for if a stricture will permit the large diameter of the bulb of the ordinary olive-pointed bougie to pass through it, the narrow shank of the instrument can not cause dilatation. The relation between the shape of these sounds and that of the ordinary olive-pointed bougies is the same as that between the urethral sounds and the bougie à Boule, and for this reason I prefer to call these instruments sounds and not bougies.

In order to measure the distance to which the sound is introduced, a scale has been provided. As the instruments are so small that a numerical scale can not be used, a series of black marks and spaces, arranged in an arbitrary manner, has been employed. When the sound has been inserted into the catheter as far as the beginning of the first black mark, the tip of the sound will be flush with the end of the catheter. This first mark is 10mm. long. The second mark begins at 20mm., and ends at 25mm., the usual position of the isthmus. Beyond the point denoting the isthmus there are three black marks each 2mm. long, separated by spaces of 2mm. Before taking a reading of the position of the sound, it is necessary to make

* Read before the Section on Otology of the New York Academy of Medicine, March 8, 1906.

sure that the end of the catheter lies against the orifice of the tube. This can be done by holding the sound firmly with one hand, and moving the catheter along the sound with the other until the end is felt to impinge against the tube.

In using the sounds for diagnostic purposes, the thickest one is passed first. As soon as one is found which passes the stricture, or which passes the normal resistance at the isthmus, it is advanced beyond the 25mm. mark with great caution, one or two mm. at a time, the drum being inspected after each advance, to watch for the appearance of the sound in the tympanum. This is indicated by a bright pink dot or mark protruding from the anterior margin of the drum and pointing towards the short process. The distance to which it has been introduced is indicated by the scale, and by this means the sound can always be re-introduced to exactly the same distance.



When a sound has been passed through a stricture, it is allowed to remain in situ for five minutes, when it will be found to lie loosely in the tube. It is then withdrawn and a larger size passed, if necessary using force to overcome resistance. The amount of force that can be used with these instruments is limited by their flexibility, and is not sufficient to cause injury to the lining of the tube. The second sound is allowed to remain in situ five minutes, and if possible a third may be passed at the same sitting. This procedure may be repeated daily until the largest sound passes without resistance. The intervals are then lengthened until the sounds are passed once in a week or two weeks. As long as the stricture remains patent during this interval, no other treatment of the tube is necessary.

In one case following scarlatinal otitis, in which the tube was constricted at three places to such a degree that the smallest sound

only could be passed at first, one or two sounds were passed daily for more than two months. At the end of this time the largest sound could be passed without resistance, and at the end of four months the intervals of treatment were lengthened to ten days. No treatment of any kind was used during the intervals. The hearing was improved from whisper close to the ear to whisper at 15 feet.

In another case, an old syphilitic, with a stricture at the tympanic orifice, in whom the sounds were passed every other day, it took about three months to dilate the stricture from No. 1 to No. 4.

In several more recent cases, where the stricture was probably due to an unorganized exudation in the mucous membrane of the tube, it was possible to dilate from No. 1 to No. 4 in one sitting.

On account of the softness, smoothness and flexibility of these sounds they have never caused irritation of the tube in any of the cases, in spite of the frequent and rather energetic sounding.

The instruments were made for me by Messrs. Tiemann & Co., of this city. They are supplied in a set of five sounds, with a catheter of proper length.

616 Madison Ave.

Primary Diphtheria of the Pharyngeal Tonsil.—ROCAZ (Bordeaux:)—*Cong. franc. de méd.*, Paris, Oct. 24-28, 1904.

It frequently happens in the course of a severe attack of throat diphtheria that the pharyngeal tonsil is secondarily involved. In addition to these cases, however, there exists, although much more rarely, cases in which the primary localization of the Loeffler bacillus is on the pharyngeal tonsil, and there exists therefore a real diphtheritic adenoiditis. The symptomatology is somewhat restricted: a sense of chilliness, vague or auricular pains, adenopathy. The diagnosis is made either with the rhinoscopic mirror, or a microscopic examination is made for the bacillus, the culture being made from the posterior part of the nasal cavity. This form of diphtheria is usually very severe, and there is apt to be recurrence on account of the difficulty of the diagnosis. The treatment is by means of the anti-toxin and local applications.

W. SCHEPPEGRELL.

A CONTRIBUTION TO THE STUDY OF TUBERCULOSIS OF THE TONSILS.*

BY GEORGE BACON WOOD, M.D., PHILADELPHIA.

In the conclusion of a paper read at the Atlantic City Meeting of American Medical Association in 1904, I said, "The tonsillar tissue of the throat, because of its peculiar anatomic construction and its topographic relations, is more liable to become infected by tuberculosis than is any other part of the upper respiratory tract." I still feel that this is true, and that the frequency of tuberculous infection of the tonsil is not realized by the general practitioner.

Stohr was probably the first to call attention to the peculiar dehiscences which exist in the cryptal epithelium of the tonsils. While I cannot agree with his theory that these spaces in the epithelium are due to the out wandering of leucocytes, there can be no question but that the protective properties of the epithelium are greatly lessened by this peculiar epithelial disintegration. Theoretically, it would seem that minute foreign bodies and under certain conditions, micro-organisms could gain access to the sub-epithelial strata. This ease of entrance is due in part to the separation of the epithelial cells, but also to the fact that the disappearance of a basement membrane and sub-epithelial tissue brings the epithelial cells themselves into direct relation with the parenchyma of the organ. The work of Goodale, Hendelsohn, Kayser and also Piera has demonstrated that this penetration of foreign bodies and bacteria through the cryptal epithelium is an assured fact. Dmochowsky found tubercle bacilli in the act of penetrating through the epithelial cells of the crypts and especially where the dehiscences were marked. In a series of experiments on hogs, published in the paper above referred to, I showed that tubercle bacilli of a virulent nature easily infect the tonsillar tissue and invade these tissues in preference to other portions of the throat.

After publication of this article, I made further experiments, endeavoring to determine whether the tonsil will permit tubercle

* Read at the meeting of the Eastern Section of the American Laryngological, Rhinological and Otolological Society, at Syracuse, N. Y., February 10, 1906.

bacilli to pass through it without showing evidence of pathological lesion. Unfortunately the majority of these experiments were failures, because the guinea pigs inoculated with the tonsillar lymph glands died before sufficient time had elapsed for the tuberculous process to develop.

One of the experiments however, which were carried out at the Laboratory of the State Live-stock Sanitary Board of Pennsylvania, was successful and demonstrated that, under certain circumstances, an apparently healthy tonsil does not prevent the passage of virulent tubercle bacilli through its substance, and thence into the efferent lymph vessels.

A small white hog was inoculated on November 28th with virulent tubercle bacilli by rubbing a cotton swab, saturated with the culture, over the surface of the faucial tonsils. The same procedure was repeated on November 29th. The animal was killed on December 2nd.

The postmortem showed no enlargement of any lymph glands and the viscera were normal as far as could be ascertained by macroscopic examination. The tongue, pharynx and all the organs of the neck were carefully removed in one piece and immersed in a 5 per cent carbolic acid solution for 15 minutes. Under strict aseptic precautions the tonsillar lymph gland was removed from each side of the neck, and ground up in a mortar with sterilized water. This mixture was injected into the peritoneal cavity of two guinea pigs.

Guinea pig A. died December 30th apparently from an infection of bite-wounds on the back. The internal organs showed general signs of septic infection but no tuberculosis could be found.

Guinea pig B. was killed on March 9th, 1905. Postmortem examination showed enlargement of the cervical lymph glands; enlargement and caseation of the bronchial glands and enlargement of the mesenteric glands. The lung contained numerous tubercles, some of which were caseous. The liver was friable, enlarged and dotted with a few tubercles. The spleen was very greatly enlarged and was infiltrated with numerous large tubercles. The momentum was thickened, nodular and greatly increased in size. Tubercle bacilli were found in the splenic nodules.

There can be no doubt but that in this case we have an inoculation tuberculosis. The lesion in the omentum and peritoneal cavity was at the seat of the injection. The first guinea pig did not show tuberculosis probably because the animal died of other causes before

this tuberculous process had sufficiently developed to be recognized. The important fact to be gleaned from this experiment is that the tubercle bacilli passed through the tonsil to the lymphatic glands of the neck within 5 days after inoculation, in other words, even while in an apparently normal state, the tonsil was unable to filter out living tubercle bacilli.

Theoretically, we can explain the entrance of inert foreign bodies into the parenchyma of the tonsil as due to the action of the faucial muscles and to the presence of a lymph current within the tonsil itself. During the act of swallowing the palatoglossal and palatopharyngeal muscles must compress the tonsil and force the centrally lying bodies towards the periphery. If a particle has gained access to a crypt, it is pushed in an outward direction and finding no appreciable barrier in the differentiated epithelium of the crypt, enters the tonsillar parenchyma. The lymphoid current in the tonsil itself is produced by the manufacture of lymphoid cells in the germinating follicles. This current except for the occasional rupture of the cryptal epithelium tends to carry the lymphoid cells into the lymph radicles and thence through the lymph vessels of the connective tissue trabeculae into the tonsillar efferents. An inert foreign body causing no reaction in the tonsillar tissue passes along with the lymphoid cells until it is removed or destroyed by the phagocytic action of the more highly developed leucocytes. A living micro-organism however, is probably destroyed as soon as it enters the tonsillar parenchyma, unless the dosage of the organism is sufficient to overcome the vital resistance of the tonsillar structure. The reaction which takes place upon the entrance of pathogenic germs, results from the peculiar relation which exists between the tissues and the toxins of the infecting germs. The great virulence of the streptococcic toxin causes necrosis and rapid death of the tissues. The lessened virulence of the staphylococcus permits more reaction, hence the out-pouring of leucocytes with the formation of pus. The tubercle bacillus produces a characteristic change, namely the formation of tubercles.

The pathology of tuberculosis of the tonsils resembles tuberculosis of the lymph glands slightly modified. The tonsillar tissue possesses a remarkable resistance to bacterial toxins and an ability to rapid recuperation. Bearing this fact in mind, the characteristic features of tubercles in the tonsils is easily understood. In those cases which I thought to be primary, the tubercles were discreet, made up of epithelioid cells and giant cells but with very little or no

necrosis. The peripheral zone of small round cells was also absent or else could not be distinguished from the tonsillar tissue. The tubercle bacilli were very few and in the majority of the cases, they could not be demonstrated. In secondary tuberculosis of the tonsil due to auto-inoculation through the sputum, the lesions may show extensive necrosis and tend to become confluent, but as a rule, even with the vital resistance lessened as it is in phthisis pulmonalis, the tubercles are usually discreet and attended with very little necrosis. The ease, however, with which the tubercle germ may gain entrance to the tonsil, is shown by the fact that practically in every case of advanced tuberculosis of the lungs the tonsils are involved.

In spite of the frequency of the infection, a demonstrable lesion of the tonsils during life is a very rare condition. When ulceration takes place, I believe that the destruction of the tonsillar substance is due to a mixed infection. Undoubtedly the tuberculous lesion lessens the ordinary resistance of the tonsil to bacterial invasion.

Tuberculosis of the tonsil heals by fibrosis, and even in advanced disease, the tendency to the deposit of connective tissue around the tubercle can be very easily demonstrated. Staining with Mallory's connective tissue stain brings out this feature very prominently. The thickness and efficiency of this barrier of connective tissue, depends upon the chronicity of the lesion. I am inclined to believe that in certain cases of fibroid tonsils in which the deposit of connective tissue is more or less limited to distinct areas and does not apparently originate from the trabeculae, the tissue is the scar of an old tubercular lesion.

The lymphatic drainage from the faucial tonsils, runs directly to a certain gland of the upper deep cervical group, which group is connected by efferents and afferents with practically all the lymph glands of the neck and head. The tonsillar lymph gland is generally situated just below the posterior belly of the digastric muscle where it crosses the anterior border of the sterno-cleido-mastoid. Topographically, this spot is located just behind and below the angle of the jaw. In tuberculous adenitis of the neck, it is this gland that is almost invariably the first one to become enlarged; but subsequently, any of the cervical glands, the sub-maxillary, the occipital, the sub-occipital and even the parotid lymph glands may become infected by a retrograde invasion, due to the damming back of the lymph current. The natural course of invasion is downward, involving the lower glands of the deep lateral chain until the jugular lymph trunk is reached and the infecting germ gains

access to the blood. When the dosage is large, and the germ very virulent, such a course is probable, but in the very large majority of cases of tuberculous adenitis, the dosage has been a small one and the lymph gland has had sufficient time to obstruct the invasion.

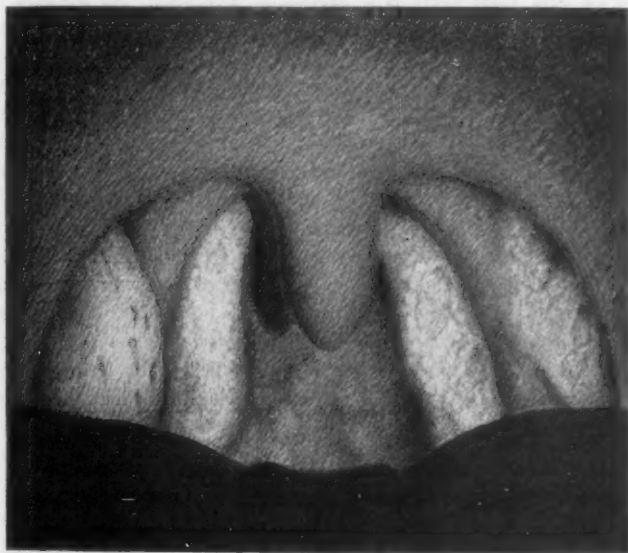
I should like to briefly call attention to the possibility of infection of the apices of the lungs, by way of the lymphatics of the neck. A recent article by von Ruck⁴, which is a review of the literature of pleurisy in its relation to tuberculosis and some deductions from clinical observations by himself, shows that the majority of so-called idiopathic pleurisies, both wet and dry, are due to the tubercle bacillus. There are two routes by which the pleura may be infected: First, through the lymphatics of the lung which end in stomata opening into the pleural cavity. Fleiner² has traced particles of India ink through these lymphatics, and Arnold and Zenker¹ have found coal and metal dust in pleuritic adhesions. Second, and that which concerns us more particularly, is the lymphatic route from the neck, which has been established by Grober's³ researches. By injecting the tonsil of a dog with India ink, he has traced the particles through the glands of the neck to the apical pleura. The peritracheal, substernal and mediastinal glands were also injected. To me it seems that these experiments, backed with certain anatomical and clinical knowledge, confirm the idea of direct infection of the apices of the pleura by the tubercle bacillus from the cervical lymph glands, and I should like to add that in a large majority of cases this infection starts in the tonsils. The supraclavicular lymph glands are in close proximity to the apices of the lung, and according to Fleiner, receive efferents from the pleura. Also the two glands which are generally situated in the sterno-clavicular articulation are regionary to the apical pleura. It is a well-known fact, that the supra-clavicular glands are frequently closely associated by anastomoses with the deep cervical lymph glands.

The following case came under my observation and is of interest as clinical evidence of the above method of infection.

I first saw Miss H. L., age 26, on January 17th, 1906. The history of this case is as follows: She had been perfectly well up until the 14th of last July, when she was overcome with heat while working in a laundry. Since then she has lost about 27 pounds in weight. She had no cough and no throat or nose symptoms until December 22nd, 1905. At that time, the throat became sore, gradually getting worse until marked odynophagia had developed. Almost immediately after her throat became sore, the right tonsillar lymph gland

enlarged and was painful to the touch. The infection spread from this gland to others of the upper deep cervical chain, also to the sub-maxillary glands, to the occipital and to the mastoid glands. The involvement on the left side of the neck was not as marked as on the right side, yet very distinct.

The examination showed a marked enlargement of the upper deep cervical lymph glands especially on the right side. There was tenderness and enlargement of the right sub-maxillary glands and of



Tuberculosis of Faucial Tonsils and Lateral Fold of the Pharynx.

the occipital glands. A slight enlargement of the tonsillar lymph gland on the left side and tenderness and enlargement of a mastoid gland on the left side. A gland situated on the anterior border of the trapezius well down towards the base of the neck, on the right side, was enlarged and tender. This gland probably belonged to the supraclavicular group. Both nasal fossae were free, turbinates contracted and the septum deviated slightly towards the right. All her teeth which had not been removed, were in good condition

except one carious molar on the left side below. The uvula was somewhat enlarged and slightly edematous. The tonsils and lateral folds of the throat presented an appearance which is well shown in the illustration. It will be noticed that the left faucial tonsil is partially destroyed, the destructive lesion being chiefly within the tonsil itself. A whitish necrosed area can be seen at the upper part. The right faucial tonsil is somewhat enlarged, of a normal appearance, except at the supratonsillar fossa where there is a slight amount of necrotic material. Both lateral folds of the pharynx are infiltrated and enlarged to about three or four times their ordinary thickness and on both folds there is a superficial ulceration, the borders of which are irregular as though made up of numerous small tubercles. The base of the ulcer is covered with a whitish secretion which could be removed with a swab. The pharyngeal tonsil does not present any ulceration although it is slightly enlarged. The lingual tonsil is enlarged and presents two distinct ulcerated areas each about the size of a dime. The epiglottis and larynx are normal as far as can be seen. The case seemed so interesting to me, being possibly one of primary tuberculosis of the tonsils, that at my request, she presented herself for examination at the Henry Phipps Institute. Dr. Flick made a very careful examination of her pulmonary condition, and gave me the following report: The pleura is adherent over both apices, a condition which has probably existed for some time. Besides this chronic pleurisy, there is a small lesion in the right upper lobe and also in the left apex. These two latter lesions are probably recent, although this cannot be positively determined. Some impairment of resonance in the mid-scapular line suggests the possibility of enlargement of the peribronchial lymph glands.

A portion of the right tonsil was removed and examined under the microscope. Signs of rather acute inflammation were present, as shown by the marked diapedesis of the polymorphonuclear leucocytes. Scattered throughout the intra-follicular tissue were a few small tubercles, in some of which were giant cells. A number of sections were stained for tubercle bacilli, but only once was I able to find what I thought to be the specific germ. Smears made from ulcerated area of the throat were negative as far as tubercle bacilli were concerned.

A summary of this case is briefly as follows: Tuberculosis of the tonsillar tissues of the throat with involvement of the cervical lymph glands. Spreading of the infection both with and against the lymph current. Old adhesions of the apical pleura and lesions in the upper

lobes of both lungs probably of recent date. It is impossible to say which lesion is primary, that in the lung or that in the tonsils, but I am inclined to believe that the tonsillar infection is the original one as the lesion here is much more advanced. Further it is practically impossible for the pleural involvement to spread against the lymph current clear up to the tonsils. The distinct ulceration in the tonsillar tissue was due to a mixed infection, streptococcus; and it is only since this infection has taken place that the subjective symptoms such as sore throat have been present.

It has been impossible in this paper to enter into a detailed discussion concerning pulmonary infection from the tonsils. The evidence in favor of this method of infection has however, of late been increasing and it has been with the thought that perhaps a suggestion along this line might lead to further research, that I seek pardon for having written this rather inconclusive paper.

BIBLIOGRAPHY.

1. Arnold & Zenker. Staubinhalationskrankheiten der Lungen. *Deutsches Arch. f. klin. Med.*, Leipzig, ii, 1867.
2. Fleiner. Ueber die Resorption korpuscularer Elemente durch Lungen und Pleura. *Virchow's Archiv*, 1888.
3. Grober, Julian A. Die Infectionswege der Pleura. *Deutsches Arch. f. klin. Med.*, Leipzig, vol. 68, 1900, p. 296.
4. von Ruck, Silvio. The Relation of Pleurisy to Tuberculosis. *New York Med. Journ. and Phila. Med. Journ.*, Sept. 30, 1905.

129 S. 18th St.

EMPYEMA OF FRONTAL, ETHMOIDAL AND SPHENOIDAL CELLS, WITH ABSCESS IN ORBIT, SEROUS MENINGITIS, OPTIC NEURITIS, OTITIS MEDIA. OPERATION. RECOVERY.*

BY NORTON L. WILSON, M.D., ELIZABETH, N. J.

On Christmas morning of last year, Mr. M. walked into my office, and gave the following history: About two years ago he began to have a nasal catarrh. He was treated in one of the New York Hospitals by cauterizing his inferior turbinate, since which time his nose has been more or less obstructed because of adhesions forming between turbinate and septum. This deformity was removed last summer.

On several occasions he has suffered with severe pain in the head, and especially over the left eye. The discharge from the nose has been thick and slightly offensive in odor, and for the past year his sense of smell has been impaired. The last two weeks he has been laid up in bed with considerable pain in the head and over the left eye. His temperature has been as high as 101°F. The sight of the left eye has rapidly failed, and one week ago the left ear began to discharge, after a painful night.

Examination.—White, male, age 30, married, 5 ft. 6 in., weight 120 lbs. Family history negative. Had the usual diseases of childhood. Never had syphilis or any serious disease. Looked pale and weak, and appeared somewhat apathetic. Examination of left ear showed pus in external auditory canal and large perforation in superior posterior quadrant. Mastoid was not tender and gave him no pain. Examination of pus showed streptococci. Examination of nose showed perforation of septum, which had occurred when the adhesion of the turbinate and septum had been freed. Pus was in the middle meatus and could be easily traced into the hiatus semilunaris as the anterior end of the middle turbinate had been removed last summer. The probe showed disease of the ethmoid and sphenoid cells, and in spite of careful manipulation would pass into the anterior ethmoid cells instead of the frontal sinus. The canula and trocar passed under the inferior turbinate into the antrum with a stream of warm saline solution gave no evidence of antrum disease.

* Read by Title at the Meeting of the Eastern Section of the American Laryngological, Rhinological and Otolological Society, at Syracuse, February 10, 1906.

Transillumination of the antrum and frontal sinus was negative, and I felt sure the frontal sinus was involved from the fact I could not enter it through the frontal duct and from the pain and tenderness over the sinus.

Examination of the left eye showed slight congestion of the conjunctiva, but no paralysis of any of the muscles. The ophthalmoscope revealed a well marked papillitis, and tests showed he was blind in the nasal half of this field.

He was sent to the hospital, and prepared for operation. Temperature 99.6°, Pulse 100.

The following day I made a Killian operation, entering the frontal sinus from below, through the roof of the orbit at its inner angle. The bridge of bone was left *in situ*, and as the sinus was large I had no trouble in working from above as well as below. There was only a small amount of pus in the sinus but the mucous membrane was thick and studded with granulations. The entire mucous membrane was removed and the bone found healthy.

I then attacked the anterior ethmoid cells which were necrotic as were those of the posterior cells. In the region of the posterior cells, the orbital wall was necrotic and a hole about the size of a dime from which pus was oozing, could be distinctly made out. The anterior wall of the sphenoid was likewise necrotic and was removed. In removing the wall of the orbit, and especially in the region of the trochlear, I was materially assisted by the use of Kerrisons' forceps. The orbital fat protruded only slightly into the frontal sinus after the wall was removed, and so far as I could see was of little or no benefit in filling up that cavity.

The wound was stitched through the eye-brow which had been cut off with scissors and not shaved, and although I had been careful to make slight cross-cuts, so as to carefully approximate the parts, I did not find them of advantage and finally abandoned them and stitched the opposing surfaces just as I do in a mastoid wound. The frontal sinus and the roof of the nose were packed with sterile gauze and the ends came out alongside the nasal bone.

I desire to state here that just before I operated, while the patient was on the table, I had a lumbar puncture made and although the spinal fluid was clear, it spurted out, showing it was under pressure. He undoubtedly had a serous meningitis, and in considering the optic neuritis this must not be forgotten as an etiological factor, although I am of the opinion that pus in the orbit made pressure

upon the optic nerve and thus produced blindness of the nasal half of the field.

The notes taken at the time of dressing were as follows:—

Second day after operation.—Patient complains of some pain in the head. Removed dressings. Wound looks well and drains in good condition. Nasal half of retina still blind, otherwise eye looks normal. Movements of eye perfect. I was unable to determine whether or not diplopia existed because of the blindness. Patient can see my hand move when carried to the right side of face, but cannot count fingers. Right lids, both upper and lower were oedematous. Bowels constipated. Ordered 1/6 gr. calomel every hour until 1 gr. had been given. Apenta water in the morning. Pulse 70, mouth temp. 98.4°. (This was the only mouth temperature, all others were rectal.)

Third day after operation.—Wound looks well, Removed packing which appeared all right. Repacked. Right side of face oedematous. Says he does not see well with right eye. Ophthalmoscope shows very slight haziness in optic nerve with vessels somewhat engorged. Pulse 70, temp. 99.6°.

Fourth day after operation:—Removed drain from ear. Discharge somewhat diminished. Washed nose with saline solution. Pulse 78, temp. 99°.

Fifth day after operation.—Dressed wound. Removed five stitches from eyebrow; wound healed. Drains only slightly soiled. Repacked. Removed drain from ear and repacked. Pulse 76, temp. 99°.

Sixth day after operation.—Removed drain from ear. Pulse 76, temp. 99.

Seventh day after operation.—Removed packing which was considerably soiled and some of the pus had gotten into the eye and set up a conjunctivitis. A 1% sol. silver nitrate was applied to conjunctiva. Ear drain removed, which was only slightly soiled. Ophthalmoscope showed right eye clear; left disc about same as it had been. Pulse 80, temp. 99.6°. At this juncture I had determined to make subconjunctival injection of saline solution to see if I could hasten the absorption of the inflammatory products within the eye, but owing to the existing conjunctivitis, I was deterred from this procedure, and as subsequent results show, it would have been entirely unnecessary, and no doubt would have falsely strengthened my belief in such treatment. I then determined to close the external wound and pack through the nose.

I will not weary you with a further recital of each day's progress, Suffice it to say that the membrana tympani healed on the ninth day. He left the hospital on the seventeenth day after operation, and was able to count my fingers with his left eye at two feet.

On January 28th I ceased to pack his nose; there was very little discharge. The external wound had long since healed and the deformity was nil; the eyebrow having grown out sufficiently to cover the scar, and only a red line could be seen on the side of the nose. His vision in the right eye was 20/20 or normal, and in the left eye 20/50+ or 3 lines above normal. There was no diplopia. He had gained twelve pounds in flesh and felt well.

410 Westminster Ave.

Lumbar Puncture in Localized Meningitis.—FRITZ GROSSMANN—
Arch. f. Ohrenh., Leipzig, December, 1904.

The author reports three cases in which meningeal symptoms were pronounced. In the first case, the fluid obtained by lumbar puncture contained pus cells and diplococci. The patient recovered. In the second case an acute infection had taken place in an ear which had been suppurating for a long time. The meningeal symptoms were well marked, but the cerebro-spinal fluid contained pus cells, but no bacteria. After operation the symptoms become worse, but the fluid from a second puncture showed no change. The autopsy showed that the patient died of sepsis, there being no sign of meningitis.

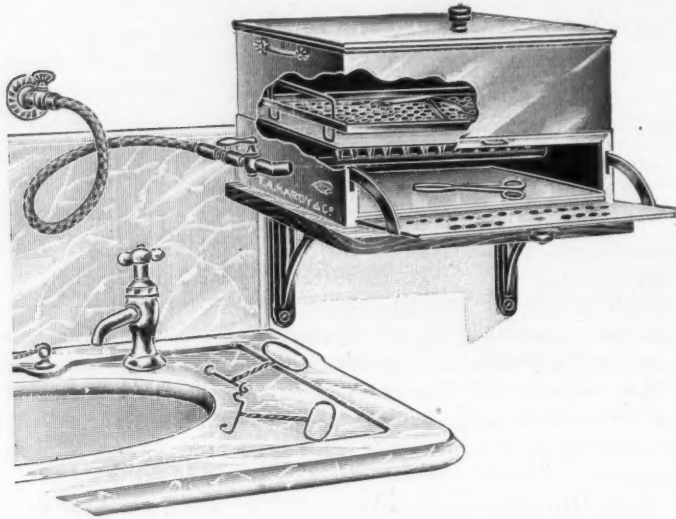
In the third case, a perforation of the dura was found at the time of operation. No lumbar puncture was performed.

YANKAUER.

AN IMPROVED OFFICE STERILIZER.

BY EDWIN PYNCHON, M.D., CHICAGO.

A simple and efficient method for the sterilization of instruments required in office operations in nose, throat and ear practice is a necessity. After a considerable experience with different devices, I have recently perfected a sterilizer which fills the requirements



better than any I have heretofore seen. For a model I selected the E 987 sterilizer made by Wm. Boekel & Co., of Philadelphia, and ordered one slightly larger than the original. To this I have added certain improvements which I will describe. The hot water tank of the original was 8x6x2. This I had enlarged to 9x6x3 $\frac{3}{4}$, which size will accommodate any instrument used in routine office work, and to this tank I had attached at either end a handle. In place of the projecting nipple for the gas hose, which occupied too much space, I employed an L, so that it became parallel with the end of the base. In the gas cock I had made a small groove so that when it is turned

off there still passes enough gas to give a very small flame, though large enough to keep the water at or near a boiling heat. In this way as soon as the gas is turned on the water boils almost instantly, and in order to be more easily operated, I had applied a projecting handle to the revolving piece. When leaving the office the gas is entirely turned off by use of the gas cock on the wall to which the gas hose is attached.

When used as an instrument boiler, the water tank should contain 3 pints of water, which gives a depth of $1\frac{1}{2}$ inches. To this quantity of water, I add one ounce of Squibb's Powd. Biborate of Soda, which makes a 2% solution, and is better than Carbonate of Soda, being less harmful to delicate instruments and equally as cleansing. The chemically pure borax is far better than the commercial article, and while more expensive, is the cheapest in the end and, for that matter, when bought at wholesale price, the whole ounce costs only a fraction over two cents. As the water evaporates by boiling, additional water should be added when required though the borax need not be replaced oftener than once a week if proper care is taken to thoroughly rinse all blood and secretions from the instrument before it is put in the boiler.

Inside of the boiler is a removable metal instrument tray with numerous perforations. When in the usual position this tray is one-half inch above the boiler bottom. After the boiling, if desired, this tray with the instruments can be lifted bodily out by using the pair of wire hooks which go with the sterilizer. Personally my preference is to lift each instrument out separately with a suitable forceps, rinsing the same in a stream of boiling water so as to remove the alkaline solution when, after drying with a towel, I place the instrument in the drying oven beneath the gas flame.

The metal tray is provided with short legs below so as to give the one-half inch elevation previously mentioned, while the arms above are wide and of such a height as to support the tray one and one-half inches above the bottom of the boiler when it is reversed, thus giving a support above the water whenever it is desired to sterilize bandages, etc., by steam. When used for this purpose there should not be over a pint of water in the boiler below the tray. As the borax does not evaporate, its presence is of no disadvantage when it is desired to thus use steam.

I have previously alluded to the drying oven which is one of the most valuable features in my sterilizer. Access is gained to it by lowering the door in the front of the sterilizer base. I thus utilize

a space previously wasted. By the use of dry heat in this way for a few minutes all humidity is driven from the crevices and joints so common in the complicated instruments which are so frequently required as, for example, scissors and forceps of the Grünwald pattern. Ample heat is secured when the gas is turned down to the low point. This sterilizer is made by F. A. Hardy & Co., of Chicago.

Columbus Memorial Building.

Catarrhal and Gouty Conditions. SETH SCOTT BISHOP. *The Medical Mirror*, January, 1905.

Despite the vigorous criticisms that the uric-acid theory of gouty conditions has aroused of recent time, the author still remains an ardent believer in the idea that there is a marked increase of uric acid in the blood in gout, and that deposits of crystalline sodium biurate take place in the tissues, followed by inflammatory action in these tissues, with pain, and other symptoms characteristic of the disease.

The deposition of the biurate occurs principally in cartilaginous structures, and therefore, the cartilaginous septum and the cartilages of the larynx at times become the seat of this deposit, and then excite irritation or inflammation sufficiently to cause catarrhal states of the mucous membrane.

To obviate this state of affairs, ten to fifteen grains of effervescing citrate of lithia twice a day are ordered, thus favoring the ready solubility of the uric acid and its speedy elimination. Abstinence from red meat, sweets, wine and beer is necessary.

STEIN.

THE ANTITOXIN TREATMENT OF HAY FEVER.

BY LEWIS S. SOMERS, M.D., PHILADELPHIA, PA.

In a previous communication (Philadelphia County Medical Society, Dec. 23, 1903) I reported my experience with the use of Dunbar's serum in ten cases of hay fever of the autumnal type, the symptoms being well developed in all when first seen, so that they were peculiarly suitable to test the value of the serum, as any results from its administration could be readily ascertained. The antitoxin was made from the pollen toxin of goldenrod and was employed both in liquid and powder form. The results with but one exception, proved most gratifying, and in the only case in which hay asthma occurred, it was promptly controlled.

From the experience thus obtained, the following conclusions were tentatively suggested: 1. The serum produces prompt and positive amelioration of the symptoms of fall hay fever in the majority of cases. 2. In a smaller number, this favorable result is accompanied with the complete disappearance of the affection. 3. Where slight or no action is seen after its use, pollen as an etiological factor does not predominate. 4. When results are obtained, it favorably influences all the manifestations of hay fever. 5. While I am unable to state from personal experience, the effect of the serum upon hay fever occurring at other times of the year, or its effect when administered in advance of the attack, yet when given during the attack irrespective of its severity, it produces marked palliation rather than absolute cure. 6. Its effects upon future attacks remain as yet unknown. 7. The serum in powder form is slightly soothing to the nasal mucosa, has but little influence upon the other symptoms of the affection and in occasional cases it may act as a direct irritant. 8. As a result of larger experience especially with hay fever occurring at other times of the year, it may become necessary to modify some of the opinions in regard to this antitoxin.

Concerning the essential factors, I have found during the two years following this, that the results have been fully as successful as those previously obtained, while the same favorable action has been obtained in cases seen at other times during the year.

As is well known, the toxin obtained from the pollen of various plants and grasses, when applied in minute doses to the conjunctiva

of individuals susceptible to hay fever, will produce the symptoms of that affection within a few minutes and at any time of the year irrespective of the season, so that it is possible to artificially produce an attack of hay fever in midwinter for example. The action produced by the toxin under artificial conditions, resembles in every respect the symptoms of the disease and as the attacks vary in intensity, so individuals are affected in varying degrees by the toxin when artificially introduced, from mere irritation of the mucosa, to the fully developed hay fever. It is hardly necessary to state that the antitoxin neutralizes the toxin and when applied to the eye, for instance, neutralization is not limited to this particular area, but counteracts its effects *in toto*, so the nose and throat symptoms are also abolished, or relieved to a varying degree; the same effect being produced when the patient is suffering from the actual disease.

In hay fever of spring and early summer, the results that I have obtained are similar to those seen in the autumnal type, except while materially modified as regards its severity, its duration is not to any extent shortened, and in order to keep the symptoms under control, it has seemed necessary to continue the antitoxin during the usual period of the affection.

This is shown in the following case: J. V., age 14 years, developed hay fever at the age of 10 years; the attacks commencing the first week in May and terminating the early part of July. Various remedies were used during the first two years without success, except that adrenalin lessened the nasal obstruction. The following year liquid antitoxin was commenced after the affection had existed for nearly one month, and while no results were obtained for three days, after this time the distress was greatly lessened, so by applying it to the eyes and nose from three to four times daily, the symptoms were kept in complete abeyance, but did not disappear until the usual time. During 1905, the attack came on following his attempt to cut a small patch of grass. The powdered antitoxin was employed and as long as it was used several times daily, no discomfort was experienced, but when discontinued, the symptom-complex became aggravated, so that it was necessary to continue it until the first week in July. The active etiological factor in this case, undoubtedly being derived from the pollen toxin of the grass, as the flora of the summer and fall would not produce symptoms of the slightest degree.

As it is especially with autumnal catarrh that antitoxin has been employed, it is this variety which presents the most practical interest and which it is desired to consider here. Coming on the middle of August and lasting until the first frost, its periodicity is characteristic and it will be found that its onset is concurrent with the flowering of the goldenrod and ragweed, while a few cases are affected when the chrysanthemums bloom. In these cases, antitoxin is superior to any remedy that we possess and not only does it palliate, or abolish the affection for that particular season, but it has an influence over hay asthma, sometimes the most distressing feature in long standing cases. After the serum has been applied to the mucosa for one or two days, the asthma lessens in intensity, or may disappear with the other symptoms, but this is usually delayed and the other symptoms are well under control before the dyspnoea responds to treatment.

The most marked effect on hay asthma that has come under my observation, was observed in the case of A. M., male, age 35 years. He was seen early in September, 1903, on account of hay fever asthma, which had recurred for ten years and was so severe that he could obtain but two or three hours' sleep, and only in a sitting posture. The serum gave immediate relief to all the symptoms except the asthma; but after its use several times daily, this had so diminished by the third day, that he was able to sleep naturally; and in the course of a week it had entirely disappeared. Occasional sneezing only remained, which ceased when the serum was applied to the nose. For the past two seasons his hay fever recurred in a mild form at the usual time and was entirely controlled by antitoxin, while a slight dyspnoea developed at the end of the first week, but disappeared in two or three days.

It is not however, the good results that it is especially desired to record, but to ascertain as far as possible the causes of failure and the ways in which these may be overcome. Not the least, is the difficulty of having the patient apply antitoxin in the proper manner, as it is well known that the individual with hay fever is difficult to manage as regards therapeutic agents and hygienic surroundings. Partial or complete failure may follow from too infrequent applications of the antitoxin; from applying it to the nasal mucosa when the latter is covered with mucous and also when the turbinal tissues have become so oedematous that absorption is inhibited. In a small number of cases, the serum from some peculiarity of the patient, or for reasons unknown, has no effect, but such in-

stances are unusual, and it seems probable that careful investigation would reveal less occult causes at fault. While undoubtedly a few cases treated as hay fever are instances of intumescent rhinitis, or vaso-motor changes allied with but independent of true hay fever, so that errors in diagnosis may play some part in an occasional failure.

The time when antitoxin should be applied, is dependent upon the severity of the attack and its duration; the most frequent error in this respect, being to wait until the attack has attained its maximum before it is employed. Preferably it should be used when the nasal chambers are not obstructed and absorption can take place; but when the attack is severe, it may be employed every ten minutes if necessary, while in the majority of cases, if used three or four times daily, the symptoms will be kept under control. It is important that it be used when there is the slightest irritation, in order to anticipate further symptoms, and it should be applied before going out of doors. While I have stated that no definite time can be fixed when antitoxin should be applied, yet there is an exception to this and that is its employment on arising in the morning. This is most essential, and as long as hay fever remains, the serum should be used at this time, for absorption is then rapid and the antitoxin becomes effective before the pollen toxin produces deleterious effects.

The method of application plays an important part in the production of successful results, as it is essential that the antitoxin be distributed over the mucosa and to best accomplish this when the tissues are not unduly swollen, I have had my patients expel the air from the lungs, when a small portion of the powdered antitoxin is placed in the nasal vestibule and a forcible inhalation draws it over the parts desired. When the nose is much obstructed this is not possible and a small powder blower must be used, or the patient draws it into the less obstructed nostril and as the tissues become less swollen, it is applied more freely. A frequent fault consists in placing the powder at the edge of the nasal vestibule, so that much of it is lost by adhering to the vibrissa. Should the nose become so obstructed that the powder is inert, a drop of the liquid may be placed in each nostril and within a short time the former may again be applied.

In the eye, a minute particle of the powder should be lightly applied to the inner border of the lower lid toward the temporal region, so that as it dissolves, the solution will exert its action over the

entire conjunctival surface as it flows towards the lachrymal duct into the nasal chamber. If this produces irritation, as the first application may, it should be repeated in ten minutes and if this is not effective, the powder or serum should be applied at intervals until the irritation disappears. In occasional cases where the palate itching is severe, the antitoxin may be applied directly to the parts by a cotton-tipped applicator and this may be repeated as required, but in the majority it will be unnecessary.

It is as important in hay fever as in other affections, that the hygiene of the patient be carefully directed, as it is impossible to obtain the best results not only with antitoxin but with any treatment, if causative and deleterious factors are allowed to exert their influence. For this reason, prophylactic measures should be taken in advance of the attack, the respiratory tract should be made as normal as possible and the general health of the patient conserved. It is also important that plants bearing pollen be kept from the house and the patient must avoid coming into contact with such plants. Should the hay fever be severe and the antitoxin not prove efficient, the patient should sleep with his windows closed, although as a rule this is not essential but if there are many plants in the vicinity of the residence, the windows must be kept closed night and day, especially on the side of the house where the wind blows. I have however, found this necessary in but few patients; and even in these, it was possible after antitoxin had been used for a few days, to ventilate the sleeping room without harmful effect.

This is shown in the following case, where the patient, a female, age 40 years, had hay fever for 16 years and it was necessary to have the windows of her room closed day and night, as her house was surrounded by a field of goldenrod. Antitoxin was used after the attack had existed for two weeks and within a few minutes, all the symptoms had passed away. Within a few hours, however, they would again return, but by using the serum she was able in a few days to sleep with the windows open; and at the end of two weeks, no hay fever remained provided antitoxin was used on arising in the morning.

It is an error, I believe, to employ large amounts of antitoxin at one time, as better results are obtained with minute doses at frequent intervals. It is advisable therefore, in order to obtain effectual results, that the patient should use the smallest dose that will be effective; a trace of the powder often being sufficient to control the symptoms for several hours at a time.

The question will often arise as to the advisability of employing other local treatment in addition to the antitoxin. I am strongly of the opinion, however, that while it is advisable to remove mucous with a mild alkaline solution previous to its application, it is not necessary to employ other local remedies, for if such be used, the action of the antitoxin is retarded or destroyed. This does not prevent general treatment, which is often essential, nor does it imply that the nasal chambers and pharynx should not be placed in as perfect a condition as possible, but antitoxin should under no circumstances be combined with other applications.

In a not inconsiderable number of patients, delayed action of the antitoxin occurs where the disease has existed for some time and the attack is severe. I have observed instances where no result was obtained from three to five days, then the full effect was manifested and the symptoms were ameliorated or entirely disappeared. Undoubtedly failures have been reported under such circumstances, and it is therefore essential to use the serum for at least a week, before one is satisfied that it is of no value in the particular case. Again in quite a number of cases, all the symptoms do not entirely disappear; but as a rule, this occurs in consequence of improper use of the antitoxin, some of the errors in its administration previously mentioned, being the cause of the partial failure. In a small number, the serum will have no effect upon the disease and these must be classed as failures such as are seen with many remedies.

In a few cases, minor untoward results have occurred, but those under my observation were the result of faulty application and were corrected when the remedy was properly used. The most marked instance of this occurring in Miss D., age 24 years, with hay fever for four years. She was seen after it had existed for two weeks and the liquid antitoxin was used in eyes and nasal chambers, several times daily. Three days later the symptoms remained unchanged and whenever the serum was applied to the eyes, it produced intense pain, photophobia and lacrimation. It was then ascertained that she was extremely susceptible to carbolic acid and the condition was explained, as the acid used as a preservative for the antitoxin was causing the mischief. This was replaced by the powder and the hay fever was brought under complete control.

At times the powder may produce some irritation of the conjunctiva and then it is advisable to use the liquid in the eyes and the powder in the nasal chambers, but the slight irritation readily

disappears if small amounts, repeated at frequent intervals, be used.

As a result of larger experience with the antitoxin of Dunbar, the conclusions previously suggested may be modified as follows:

1. The antitoxin produces prompt and positive amelioration of the symptoms of hay fever in a large majority of cases.
2. In a smaller number, this is accompanied with complete disappearance of the affection for that particular season.
3. Where slight or no action is seen, it is due to improper administration; while, in a very small number some idiosyncrasy is undoubtedly active.
4. When results are obtained, it favorably influences all the manifestations of hay fever in the larger number of cases, while in a smaller class, one or more of the symptoms seem to be most markedly influenced.
5. When given during the attack of hay fever irrespective of its severity, it produces palliation rather than absolute cure.
6. When successfully used during one season, it does not prevent the re-appearance of the disease the following season; although there is reason to believe that a slight influence in modifying future attacks does exist.
7. The antitoxin is effective in both liquid and powder form, but the latter is preferable, as it is staple, does not require a preservative, and is more convenient for the patient.

3554 North Broad St.

Paralysis of the Recurrent Laryngeal Nerve.—WALTER BERENT.

—*Berl. klin. Wchnschr.*, November 28, 1904.

Paralysis of the recurrent laryngeal nerve, associated with an aneurism, depends upon the distention of the aneurism, and may entirely disappear when the aneurism grows smaller. A solid tumor does not vary in size; hence the author considers the variation of the paralysis as characteristic of aneurism.

YANKAUER.

REPORT OF A CASE OF ADENO-SARCOMA OF THE TONSILLAR RING. RESECTION OF BOTH EXTERNAL CAROTID ARTERIES; RECOVERY.*

BY W. R. DABNEY, MARIETTA, OHIO.

In the early stages of sarcoma of the tonsils, the diagnosis is not easy, as at this time, these growths and the surrounding tissues have to a great extent the appearance of a peritonsillar abscess. Sarcoma of the pharynx grows larger than carcinoma, and does not show superficial ulceration as soon as the latter, and infiltration of the lymphatics does not take place as early in sarcoma as it does in carcinoma of the pharynx. The differential diagnosis between sarcoma, glanders and actinomycosis can be established, only by the use of the microscope. Syphilis was excluded by the therapeutic test.

Case. Mrs. G. Mulatto, aged 53 years. She was referred to me by Dr. Jacob Bohl of this city, April 10th, 1905, as she had consulted him on account of a "roaring" in her left ear.

HISTORY.—Heredity.—Several members of her family have died of tuberculosis. A history of malignancy could not be obtained.

Personal.—Has never been confined to her bed on account of pathological changes. The "roaring" which she complains of, and for which she has consulted several physicians without getting the desired relief, was the first symptom noticed by her. Her attention was first directed to it about one year ago.

Present Condition.—The examination of the external ear was negative beyond a slight hyperaemia of the drum-head along the handle of the malleus, and opposite the tympanic orifice of the Eustachian tube.

Examination of the fauces showed that the positions of the left faucial tonsil and the lingual tonsil were occupied by hard nodular growths. The growth occupying the position of the lingual tonsil extended well down into the tissues overlying the epiglottis. These growths presented a glazed appearance, and were of a dirty grayish-pink color. The right faucial tonsil was also involved, but not to the extent of the left one.

* Read by title at the meeting of the Southern Section of the American Laryngological, Rhinological and Otological Society, at Norfolk, Va., January 13, 1906.

Rhinoscopic examination showed that the nasal pharynx was almost completely occupied by a growth in the position of the of the Eustachian tube and nodular masses were intruding into the left tubal orifice.

There was a free nasal discharge and the intranasal structures were turgescient and boggy. This was due to the fact that the woman could not breathe through her nose, and when air is not passing through the nose in sufficient quantity, evaporation of the normal mucous secreted by the pituitary membrane does not take place.

The temperature was 97 2-5 F. and pulse 84.

Metastasis had already taken place as the lymphatics of the neck had become involved and the left parotoid gland felt like it was beginning to break down. The axillary and inguinal glands were enlarged, indurated and tender.

Malignancy was at once thought of, and her family were so informed. We stated to them that the growth was so extensive that it would be impossible to remove it in its entirety. After the family had had time to consider our opinion, they decided not to inform the patient that she had a malignant growth, and they also decided not to have an operation done until it was absolutely required to prevent asphyxiation.

A section was taken from the growth and sent to a pathologist for examination, and he reported that it was an adeno-sarcoma.

The woman was kept on palliative treatment until June 26th, when her symptoms had become so aggravated that it was with extreme difficulty that she was able to breathe or swallow, and her speech was interfered with to such an extent that she could scarcely make herself understood. The "roaring" that she complained of had become continuous in both ears, and she had become so deaf that one had to speak in a very loud tone when addressing her. The growth in the rhino-pharynx had advanced to such an extent that it completely occluded both Eustachian orifices.

We advised resection of the external carotids, not with the hope that it would cure the patient, but it was advanced as a substitute for tracheotomy, gastrostomy or rectal feeding, which we would have had to resort to very soon if the patient continued to grow worse with the rapidity of the previous three weeks.

Operation.—June 28th. Chloroform was administered by Dr. Bohl and the left external carotid artery was resected from the

bifurcation of the common carotid upward, including a portion of the temporal and internal maxillary arteries. The wound was closed with a continuous suture of silk and healed by first intention, except at two points where small cigarette drains were inserted.

July 7th. The right external carotid artery was resected today and a number of enlarged glands were encountered and had to be taken out before the artery could be exposed for resection. One of these glands was so firmly adherent to the internal jugular vein, that it was impossible to remove the entire gland without rupturing the vein. The parotid gland on this side seemed to be normal, and it was lifted out of the way with a blunt hook while the upper part of the artery was being uncovered for excision.

The incision closed by first intention except at a point directly over the bifurcation of the common carotid artery, where a small drain was inserted. This sinus continued to suppurate for about seven weeks, when on curretting the sinus a ligature of twenty-day chromatinized catgut came away, and the sinus at once closed.

After the arteries were resected, the tissues of the fauces became blanched and the growths began to diminish in size. This was not only noticeable on inspection, but was evidenced by the improvement in her hearing and speech. Deglutition and respiration were rendered easier, and the tinnitus was less noticeable.

January 1st. 1906. I saw this patient a few days ago and her temperature was 98 degrees F., and her pulse 85. The growths occupying the positions of the right and left faucial and lingual tonsils have diminished in size to such an extent that they are hardly more than one-fifth as large as they were before the carotids were resected. The growth occupying the position of the pharyngeal tonsil has not diminished so much in size, as according to some anatomists the pharyngeal tonsil receives a part of its blood supply from the internal carotid arteries.

The patient is now able to ingest any kind of food, while previous to the operation she could only take liquids. Hearing and speech have improved wonderfully, and she says that there is but an occasional slight "roaring" in her ears. She has gained in weight and her appetite is good.

The lymphatics of the pre-aural, cervical, axillary and inguinal regions are somewhat enlarged, but they are not so sensitive as they were when this woman first came under our care.

For several weeks before and after the operation she was very low-spirited and despondent; but at present she is in good spirits

and is not in as frequent consultation with the family Bible as she was prior to, and for some time after her operation.

While it is hardly possible that this operation will cure the woman, it has succeeded beyond our wildest dreams as a palliative measure. It has now been six months since this woman was operated upon, and she says that she is feeling better than she has in many months, and that it is yet a pleasure to be alive.

We are not much encouraged as to the final outcome of this case, as in all probability the patient will die from metastasis if she does not have an exacerbation of the original growth.

By the operation that was performed, this woman has been freed from both mental and physical suffering.

I think that we are justified in doing a carotid resection in these cases of inoperable malignant growths of the pharynx or larynx, as a palliative measure, and to obviate the necessity of doing a tracheotomy or gastrotomy, which are at best only makeshift measures, and in many instances they are vastly more troublesome to the patient and attendants than the disease for the mitigation of which they were devised. I also think that we are justified in doing this operation in these cases if we accomplish nothing more than the promotion of euthanasia.

282 Front Street.

Intratracheal Struma.—HANS NEUMAYER.—*Monatschr. f. Ohrenheilk.*, Berlin, September, 1904.

Two interesting cases are reported, occurring in sisters, one 23 years old, the other 27 years old. In both cases, a smooth, round, not ulcerated, sessile tumor, covered with dilated veins, appeared in the subglottic region. In both cases, the tumor was large enough to cause dyspnoea and cyanosis and was associated with enlargement of the thyroid externally. In one case the tumor disappeared upon the administration of iodide of potassium; in the other, iodide of potassium and thyroiodin. The external struma also diminished in both cases.

YANKAUER.

A CASE OF ABSCESS OF THE PAROTID GLAND SIMULATING MASTOID ABSCESS.

BY J. C. MCALLISTER, M.D., RIDGEWAY, PA.

In sixteen years' practice I have seen but three cases of suppurative parotitis, two of these cases coming under my notice a few months since. The following case is reported to show the need of care in diagnosis.

Case.—Mrs. L., aged 28; pregnant five months. She gave history of having had La Grippe some two weeks before I first saw her. This was followed by a suppurating ear, with great pain and loss of sleep, and very marked swelling behind, below and in front of the lower part of the ear, and a throwing of the ear forward and outward, as in mastoid disease.

Upon examination, the external auditory canal was found to be so nearly closed by the inflammatory condition present, that the membrana tympani could not be seen. There was a profuse discharge of pus from the ear. From the history and condition found upon inspection, my thought was that it was a suppurating ear following La Grippe infection and mastoid complication, and only after a few visits did it slowly come to me that it was an abscess of the parotid gland. This decision was reached by the unusual swelling and fullness below and in front of the lower part of the ear. The condition was treated expectantly, and the patient made a nice recovery.

As the swelling subsided, a tongue of granulation tissue was found nearly filling the auditory canal. This tissue was removed by snare. The other case which I saw just subsequent to the one reported above, had also ruptured spontaneously into the auditory canal at a corresponding point and there was also in this case a tongue of granulation tissue filling the canal.

Dench in his Text Book on the Ear refers to the tendency of abscess of the parotid gland to rupture spontaneously through the fissures of Santorini.

ABSCESS OF THE CARTILAGINOUS NASAL SEPTUM. (TRAUMATIC.) DEFORMITY CORRECTED BY THE SUBCUTANEOUS INJECTION OF PARAFFIN.*

BY M. D. LEDERMAN, M.D., NEW YORK.

The patient, a young man of 16, was hit on the tip of the nose while boxing. He did not suffer much pain after the accident, but was unable to breathe comfortably. Under the advice of a physician he used cold applications, but no other special treatment, and went about for a week feeling no discomfort other than the nasal occlusion. During the second week after the accident he had fever and chills, and was given quinine under the suspicion of



having malarial infection. The third week he was referred to me for correction of the seeming dislocation of the cartilage. At this time the deformity had caused a marked obstruction in both nares. On probing, a fluctuating mass was discovered on both sides, and after incision two drams of pus were evacuated. The wound was drained by a piece of gauze drawn through the incision on both sides, and after a week or ten days the abscess cavity healed up. Then the subcutaneous injection of paraffin was made with quite a satisfactory result.

In my private practice, I have seen four cases of septal abscess due to external trauma. Prompt incision and drainage would relieve it always; and if practiced early, this treatment would prevent the unsightly deformity that this patient presented at the initial examination. I have never seen so marked a deformity due to an acute affection of the nasal septum as in the present instance.

* Presented before the Laryngological Section of the New York Academy of Medicine, March 28, 1906.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON LARYNGOLOGY AND RHINOLOGY.

Stated Meeting, March 1st, 1906.

WILLIAM GILMAN THOMPSON, M.D., Chairman.

THE UPPER AIR TRACT AS AFFECTED BY INFLUENZA.

Lantern Slides of Sections of the Nose and Accessory Sinuses.—

By LEWIS A. COFFIN, M.D.

Etiology and Bacteriology.—By WM. H. PARK, M.D.

General Considerations, Symptoms and Treatment.—By CLARENCE C. RICE, M.D.

DISCUSSION.

DR. HENRY L. SWAIN said that he had been invited tonight to discuss the question of The Upper Air Tract as Affected by Influenza, and it was along this line of thought rather than in any direct discussion of the papers presented, they being complete in themselves, that he would like to say a few words. From Dr. Park's paper we learn that the germ is with us and sometimes stays in the system for as long as two years, and we may naturally suppose that this germ does not remain without producing some effect upon intercurrent affections, even though we may not have an actual attack of Grip in the sense of an overwhelming constitutional disease. The subject of the evening presented to his mind two contrasting pictures when one considered the clinical phenomena before the invasion of Grip and since. He illustrated the first picture by recounting how during his European course, he with the other students and assistants was summoned by the Professor to see a very rare clinical case, presenting a feature which the Professor had seen only two or three times in his experience. This was a bleb upon the drum. This interested them all deeply and was stored away as a rare clinical experience. Imagine by contrast, therefore, his delight when in his own practice during the first year of the Grip in this country he saw no less than 12 cases presenting blebs upon the drum. Subsequent to that, in the years that have elapsed, every

year has brought its quota of such cases accompanied with middle ear involvement and bloody discharge.

Again, previous to this first appearance of Grip, he had only seen one or two cases of acute frontal sinusitis. Imagine again his interest when during the second or third year of the Grip he had 16 cases of acute frontal sinusitis in his own practice.

Has not the whole aspect of diseases of the upper air tract changed since then, and is not the disease now endemic? Every year we have cases of Grip coming to our attention. Again, has not the treatment of such influenza conditions been of necessity greatly changed and modified? We no longer give depressants in these cases of acute inflammation, but instead give stimulants, and support and strengthen the patients. Is this condition due solely to the Grip germ, or is it not perhaps a mixture of three things in the American life of today? We have to consider first the depressing effect which has come with the Grip, and its effect on the community by repeated attacks and by continued presence of the germ with us. We have also to consider the wide-spread use of the antipyretics, the coal-tar products, which came into use with the Grip—the antipyrine, antifebrine, and headache powders seen on every druggist's counter and used in immense amounts by the public. The third element is the tremendous speed and pressure under which we live. We all work hard, many too hard, and disease of all kinds makes easy inroads upon us. Now let us for a moment turn from general considerations to the minute.

The integrity of the epithelium is necessary to the maintenance of that equilibrium between decay and repair which is known as health. If the epithelium is intact and physiologically active, we are all right, if not, we are liable to various infections. The Grip germ is a peculiarly active and virulent germ, and he believed that the ciliated epithelial cell is one of the cells most easily affected by it. This may seem a rather romantic idea, and yet he would call attention to two clinical phenomena which seemed to support it, the clinging secretion upon the nasal mucous membrane and upon the trachea. All specialists have trouble in getting the mucus from both these localities in obstinate cases of influenza. We are able to see into the trachea and can often watch the work of the ciliated epithelium elevating the mucus from below to within the grasp of the muscles of the larynx, when it can be thrown out. This happens entirely without the act of coughing in cases of simple tracheal secretion with intact epithelium. If something happens to denude the membrane of its ciliated cells, would not the mucus be liable to ad-

here over the denuded area? That is just what happens in Grip tracheitis, and it appeared to him that this is the way in which this special germ begins its work. The change brought about by the Grip germ was to inhibit the motion of the ciliated epithelium, or perhaps to kill it over certain areas, and then other germs could have a chance to enter, the motion of the cilia not being active to move them away. Other phenomena like tonsillitis and sinusitis follow the first invasion of the Grip germ. The adherent mucus in certain cases within the bronchial tract accounted for many of the severe and obstinate coughs of Grip.

A point in Dr. Park's paper which had interested him very much was the necessity of hemoglobin for the growth of the germ, without the body. Does not that explain why Grip discharges have so much serum in them, the Grip germ bringing out of the tissues and blood vessels the necessities for its life? Does not this also explain why we have such impoverishing of the blood in long standing cases of Grip, while the persistence of the germ makes the difficulty in relieving the blood changes which is essential in restoring health. It certainly appears that many changes in the behavior of our patients as contrasted with the experience of years ago are to be attributed to the stay in our land of Grip and its continued activity among us.

DR. NEWCOMB, referring to the question of hemorrhages in these Grip cases, said that his attention had been called to a group of twenty cases in which the principal symptom had been a hemorrhage from the trachea. In fully half of these cases there had been a history of a Grip attack, and in practically all, of more than one attack. Most of these patients were young adults, the youngest being sixteen years old. The sexes suffered alike. It is likely that such cases are more numerous than the published reports would lead us to expect. Perhaps every physician has cases of hemoptysis, without apparent cause. There may be symptoms of tuberculosis, but these have not developed, and the patient has improved and been dismissed, and the source of the blood has remained a mystery. Some of these cases have been followed for a sufficient length of time to enable them to be classified by themselves. The most prominent and annoying feature has been a tickling cough as though something had been swallowed. There generally has been more or less cough, some fever if the influenza was present but not otherwise, and even when present the fever was very slight and the temperature chart showed none of the characteristics of incipient tuberculosis. The bleeding has come on at intervals of days, weeks,

or even months, and generally there has been an intercurrent attack of influenza.

The chest has shown nothing in particular, perhaps a few moist rales and some symptoms of bronchial pneumonia. There have been no bacilli in the expectoration. A peculiar feature has been that in the examination of the upper air tract by means of a mirror, a varicose condition of the tracheal vessels has been discovered. If the patient has been examined during the occurrence of an ordinary hemoptysis the trachea has been found to be lined with a thin clot or with patches of clot here and there, but here the whole mucous membrane has not been involved. The upper part only of the trachea has been affected and the lower part has been clear, and from the varicose vessels of the upper trachea the blood has been seen trickling down the clean tracheal wall. These vessels in some cases run parallel to the tracheal rings; in other cases, they converge from below toward the glottis; and in still other cases, they are scattered over the tracheal wall, like small leeches.

The treatment has been rest in bed, opiates, ice pellets, and spraying of the trachea with astringents. The important question was whether these conditions were manifestations of tuberculosis or whether they should be classified by themselves. It was easy to call them incipient tuberculosis, but many of these cases had been carefully followed and no tuberculosis had developed. This region is naturally very vascular, and it bears the brunt of the impact of coughing, phonation and respiration. Given then the possibilities which Dr. Swain had mentioned of impaired local vitality and general vitality which is so common a feature of the disease, and the fact that this is one of the regions of the body in which the influenza poison primarily makes its attack, it is not impossible to believe that the influenza bacillus is responsible for this varicose condition of the trachea. This condition has been found in other diseases, and in one case it seemed to be the initial lesion of cirrhosis of the liver. In some of the cases, tuberculosis developed later, so that considerable time must elapse before a positive diagnosis could be made. One author who has reported a large number of cases says that we should not be in too much of a hurry to make a diagnosis of incipient tuberculosis when there is a little cough, blood, emaciation, and suspicious chest signs. It may be that some of the so-called cases of incipient tuberculosis have been nothing more than cases of tracheal hemorrhage following influenza.

DR. EMIL MAYER said that the main question was "How shall the general practitioner diagnose influenza, without the ability of the

specialist in differentiating the various alterations in the mucous membrane as mentioned by Dr. Rice?"

Without this condition we have the temperature, the great depression, and the fact that other members of the same family have the disease, hence there should not be much difficulty in arriving at a diagnosis.

He did not agree with Dr. Coakley that chronic sinusitis was more common today because of greater knowledge of the subject, alone, but as Dr. Rice had said, we have many more cases as the results of the Grip epidemics.

We rarely heard of these conditions formerly and they must surely have been found post-mortem if we had failed to recognize them during life.

The speaker considered the use of cocaine as dangerous and never prescribed it. Adrenalin he found of much value and this was much enhanced by the addition of a small amount of chloride of sodium. The solution used was a 1-5000 or 10,000.

He was confident that while the Antrum of Highmore could not be drained through the natural opening, yet in a certain number of cases it could be reached and washed out and in acute conditions a cure might thus be effected. This washing could be done, however, only by an expert.

DR. MYLES spoke of the great value of the slides presented by Dr. Coffin, and said that he was a believer in the importance of such anatomical studies. He had spent much time studying in the dead house, and found it as valuable a help in latter years as in former ones.

The question of influenza was a very serious one and a general consideration of the subject could not be limited to one night. We have been taught a great deal about the pathology and etiology of the disease, but we have not yet learned how to check an epidemic. No one has yet tried to quarantine it, or to disinfect places where it has appeared, with formaldehyde, or other methods, and he thought it was time that some such methods should be tried in order to check the spread of the disease and destroy the epidemic conditions which have contributed nearly one-half of the incomes of New York physicians. There are repeated sporadic outbreaks of this disease almost every winter since 1889, and we see not only chronic phenomena which have been here ever since, but frequently renewed out-breaks of acute attacks. May not the presence of this germ be continued by city conditions? There is not a building where people congregate, the average mean rate of tem-

perature of which is not greater than that of similar buildings in Cuba. It is generally 65 to 80°. This temperature is maintained all winter, and only as summer comes on goes to anything below 60. Thus our modern heating arrangements promote the conditions favorable to the development of the germs of this peculiar disease. Perhaps something like a formaldehyde disinfection might act favorably in checking this development. He had hoped that Dr. Park's paper would suggest something for the destruction of the germ. In regard to the treatment of such cases, he was a believer in the value of the different antiseptics, carbolic acid, turpentine, menthol, etc., mixed with aqueous vapor in impregnating the room freely. This vaporized inspired air was very beneficial, and his patients generally agreed with him as to the relief afforded by such measures. In chronic cases the accessory sinuses provide a permanent place of lodgment for these and other associated germs and the disease is kept up by some foci which the air cannot reach and which imperfect drainage does not relieve. In regard to the aftermath found in the trachea and bronchii, he had obtained the best results from the use of tracheal injections. He was sorry to say that he had gotten himself in bad odor by frequently using iodoform. He disliked it himself as much as his patients, but experience had taught him that used with liquid albolene as a medium it was a very valuable remedy. We must however be very cautious in using it, as some patients are subject to very acute phenomena from its administration, and it sometimes causes spasms and oedema, if used in large doses. In old chronic cases, however, where the mucosa has become extensively diseased, the best results have been obtained in this way.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON LARYNGOLOGY AND RHINOLOGY.

Regular Meeting, March 28, 1906.

T. H. BEHRENS, M.D., Chairman.

PRESENTATION OF CASES.

A Case of Leukoplakia Treated by Radium.—By WOLFF FREUDENTHAL, M.D.

The patient was a man, 58 years of age, a liquor dealer. He had been accustomed to indulge moderately in alcohol and tobacco, but had given up both entirely since coming under Dr. Freudenthal's care. He was married, and his wife and children were all healthy. When he was 20 years of age, in Singapore, he had a fall on his head. Afterwards he suffered a great deal from headaches and "moon" blindness, not being able to see at night. Later he was operated upon and felt better and could see all right again. For the past ten years or so, he has suffered from his present trouble, and has been under treatment by various physicians for five years past. The last physician who treated him was a member of the section who, after trying everything he could think of, turned him over to Dr. Freudenthal to try the effect of radium.

Dr. Freudenthal said that when first seen by him the patient presented an undoubted case of leukoplakia. The diseased area extended all over the left cheek and the superior maxilla reaching in front almost to the middle line. At that time there was a great deal of ulceration which caused so much pain that the man could not sleep at night. The question which presented itself at that time was whether it was a simple case of leukoplakia or whether it was a malignant tumor. A piece was removed for examination and the pathologist reported that there was no trace of malignancy. As almost everything else had been tried without avail it was decided to see what radium would do. At first it was used for three minutes, then for six, ten and up to twenty minutes, but mostly fifteen minutes at a sitting. The treatment was applied twice a week, commencing on the 18th of December, 1905. On the 23rd of December the patient reported that he felt somewhat easier and during the month of January he felt quite easy all the time, had no pain,

could go about his business, and slept well. In January an attempt was made to relieve the ulceration more quickly by using the galvano-cautery in a mild form, but this did not help at all. Up to the 6th of February, the patient felt quite well when he again began to complain of pain, and at one time it was so severe that the radium was omitted and high frequency current and actinic rays applied. On February 13th he felt comfortable again and this continued until the 27th when after being treated regularly again there was a fresh granulation with superficial ulcerations. On March 2nd this was broken down and he had a very large ulcerating surface, much larger than at present. He complained of so much pain that the radium was again discontinued. On the 22nd he again felt easier and the radium treatment was again applied, and on the 27th he felt quite comfortable. From the beginning of the treatment orthoform was used with the radium. It is well known that orthoform relieves pain, but in this case the relief obtained could not be attributed solely to the orthoform, because if the patient used the orthoform himself at home he did not obtain the relief which he experienced when it was used in connection with the radium. The radium was screwed on to the end of a probe, and it was found much easier to apply it in this way than with the more bulky instruments recommended in France. He said that he did not bring the patient to show the section the great results obtained by the use of radium, but in such a case we have to look for some remedy that will help relieve the pain, and radium had given him more relief than anything else that had been tried. At first too much was expected of radium and it was thought that it would cure malignant growths in a very short time, but when it was found that it did not accomplish this it was perhaps too promptly rejected. We do not yet know how to apply it and have no means of judging how far we should push it, but the future will probably teach us much about it that we do not now know. He had brought the patient to the meeting hoping that the gentlemen present would express their opinions concerning it and make some suggestions as to the further treatment.

DISCUSSION.

DR. BEAMAN DOUGLASS said that he had been very much interested in this class of cases on account of their chronicity and the tendency of most of them to undergo changes after a number of years. In simple cases of leukoplakia, at least in such cases as had come under his observation, the lesion is confined to the epithelium. The epithelium changes in character and increases in quantity, and be-

comes heaped up, but it is kept moist and softened by the fluids in the mouth. The white color is undoubtedly due to the disintegration of the epithelium by the mouth-fluids. In most cases the deeper structures are not involved for a long time, and the spots are apt to increase and decrease in size suddenly. Many of these cases which increase in one night to three or four times their former size are due to the fact that the patient has over-smoked or taken some food or liquor which does not agree with him, especially alcohol or champagne. He recalled one case where a man having imbibed heavily of champagne one night, appeared the next day with the leukoplakia involving the entire side of the mouth. Intestinal intoxication quickens these cases into activity. At first the patient suffers no pain; but as time goes on they get worse, the epithelium heaps up to a great thickness, and then takes on other changes and it becomes no longer simple leukoplakia, but advances slowly to epithelioma of a slow type, or it undergoes retrogression as the result of syphilitic lesions. His observations had led him to believe that when a case had reached such a stage as that before them for discussion it was no longer leukoplakia, since that disease is confined to the epithelium. There was very decided ulceration in this case and he considered that it had entered into the epitheliomatous stage.

In his experience the treatment of such cases was very unsatisfactory, and he had come tonight especially to see the result of the radium application. He did not, however, feel encouraged to try this method from what he had seen. He had tried almost everything in the cases under his care, but had come to the conclusion that when a case was not helped by iodide or mercury it was apt to drift along for a number of years, perhaps throughout the life of the patient, or it might undergo a malignant change. Sometimes, it disappeared entirely. Of all the remedies which he had tried, the electric needle introduced carefully into the thickened tissue had given the best results. He used two amperes of current, taking care to use the needle so as only to destroy the epithelium.

DR. FREUDENTHAL in closing the discussion said that most of the cases of leukoplakia which he had been able to follow up underwent various changes and finally developed into malignancy. He recalled one especially which he had followed for ten or twelve years, a case of leukoplakia extending from the tongue and finally developing into epithelioma. Half of the tongue was removed six or seven years ago and the patient is living still and fairly comfortable. He had never seen a case where the growth disappeared en-

tirely. Clinically this case offers several symptoms of malignancy, of this there was no doubt, and he intended to remove another piece of the growth for examination. If, however, it should be found microscopically that epithelioma has developed, what else could be done to afford the patient relief? Large doses of morphine had been tried but did not help at all. Radium had afforded some relief, and under the circumstances it seemed best to continue with that treatment. He wished very much that others would experiment further with this remedy.

Abscess of the Cartilaginous Nasal Septum. Traumatic. Deformity Corrected by the Subcutaneous Injection of Paraffin.

By M. D. LEDERMAN, M.D., New York. (*Published in full in this issue of THE LARYNGOSCOPE, page 381.*)

DISCUSSION.

DR. HURD said that the thought had occurred to him that if one could see such an abscess early enough and would go in and take out the cartilage entirely as in a submucous resection, going beyond the perichondrial tissue, and then establishing good drainage, much trouble could probably be avoided. He intended to try this on the next suitable case that presented itself. He had tried this procedure on perichondritis of the auricle, with very good results, and did not see why it would not apply in nasal cases also.

DR. SIMPSON said that he had seen a case of deformity somewhat similar to that presented but that the condition did not always depend so much on the abscess as on the degree of injury received in the first instance. It is a very common thing to see abscesses of the septum following injuries which are quite extensive, but which do not necessarily result in a deformity of the nose.

DR. HARMON SMITH said that in January he had seen two cases similar to that presented by Dr. Lederman occurring in two prize fighters and the result of blows upon the nose. One case was without incident and treated in the ordinary way. The other was unusual in that two distinct and separate cavities existed. One low down upon the septum where the pus was confined in a division of the cartilage; the division probably resulting from the blow. The other abscess was high up on the septum, unilateral, and extending back upon the vomer. No communication existed between the two.

The lower abscess had been freely opened and drained before admission to the clinic; but the patient had continued to run a septic

temperature accompanied with chills and sweats, and the physician was puzzled as to the reason for this continuance.

Not until very free evacuation of both cavities was accomplished was there any abatement of the symptoms. The case recovered slowly and most of the cartilaginous septum was destroyed. This was followed by some sagging of the dorsum which can be corrected with paraffin injection when the tissues fully recover.

A Case of Tubercular Ulceration of the Angle of the Mouth and Dorsum of Tongue. By JOHN LESHURE, M.D.

The patient was a native of Poland, 51 years of age. Family history negative. Personal history also negative up to 18 months ago, when he came under the care of the dispensary for pulmonary tuberculosis. Three months ago a swelling appeared at the angle of the mouth on the right side and then began to break down and ulcerate. Four weeks ago another ulceration appeared on the dorsum of the tongue. Both lesions had about the same appearance two weeks ago when first seen as they have now. Sections were made and submitted to the pathologist, who reported a typical tuberculosis. When the ulceration was first seen it resembled a beginning epithelioma. The microscope, however, revealed tuberculosis.

Case of Tumor in the Larynx Presented for Diagnosis. By S. MC CULLAH, M.D., for L. A. COFFIN, M.D.

The patient was a man 52 years of age, who had presented himself that afternoon at the dispensary for treatment. The first symptom that he noticed was that in the latter part of January he had some cough. Early in February he consulted a physician, who had now sent him to the hospital. There was no pain, ulceration or swelling, only a tickling feeling in the throat. There was no hoarseness, but a little thickness of the voice. There seems to be no glandular involvement. The hasty examination of the larynx which had been made, showed a large lobulated red tumor on the right side. Dr. Coffin expected to remove a small piece for examination, but would like to have suggestions from the section as to the probable diagnosis.

DISCUSSION.

DR. EMIL MAYER said that he did not think any one could express an opinion of a growth of this kind after a hasty examination. It would be necessary first to cocaineize the patient and determine whether the growth was cystic or not. Dr. Coffin has the proper

idea, namely to examine a piece of the tissue and find out whether or not it is malignant. There may also be other conditions. It may be luetic. The only proper way to arrive at the truth was to examine a piece of the tissue taken deep enough to ascertain the true nature of the growth.

Rheumatic Crico-Arytenoid Ankylosis, with Report of a Case.

By HENRY PERKINS MOSELEY, M.D.

A careful search of the literature of laryngology had revealed reports of only eleven undoubted cases. A rather complete set of references to the literature had been collected. After a short description of the disease, Dr. Moseley added a clinical report of one case.

The patient was a man, aged twenty-six years, single, who presented an ankylosis of the left crico-arytenoid joint. The onset of the condition was unknown and the patient had been under observation about nine months with absolutely no change in the condition. He is subject to mild attacks of laryngitis; but otherwise, he has little discomfort. There is a marked rheumatic family and personal history. The diagnosis was made because of the absence of any known cause of the disease.

DISCUSSION.

DR. NEWCOMB told of a case of partial ankylosis of the arytenoid which had come under his observation. The patient was a married woman with three children who had suffered from rheumatism in her earlier years and had developed a valvular lesion of the heart. The specially interesting point was that whenever the weather changed her left crico-arytenoid joint would stiffen up, make her husky, and cause some pain, just such a condition as ordinary rheumatic people suffer from, but no other joint would be affected. When dry weather came on all the symptoms would disappear and her voice would again be clear. It is unfortunate that we know so little about rheumatism, but we know all sorts of indefinite pains are ascribed to it. There seems to be no reason why an attack in the throat should not lead to ankylosis, because while the joints are small in size, yet they have the same anatomical arrangement as the larger joints and might be expected to suffer the same changes. The picture which such a case presents should recall to our minds the fact that the motion of the arytenoid cartilage on the cricoid is a double one, the latter portion of the movement being the approach of the two arytenoid cartilages toward each other, and if this latter motion should be lacking we know that there

remains a triangular gap between the posterior portions of the cords. It is sometimes extremely difficult to rule out the possibility of some intra-thoracic pressure. The introduction of skiagraphy has cleared up a great many of these doubtful cases, but some of these causes of pressure are so small and obscure that it is difficult to believe that even skiagraphy can reveal them. He was very glad that Dr. Moseley had brought the subject up, and thought that all such unusual cases should be reported.

DR. EMIL MAYER said that he did not quite grasp the rheumatic connection, in the history of the case presented. If we are to accept the dictum that Gout and Rheumatism are separate entities, then this case must rather be classed as being gouty in origin, hence Dr. Mayer suggested that the treatment be along the lines of Gout, potassium iodide and colchicum being appropriate remedies.

There is no doubt that there is a condition described as crico-arytenoid ankylosis, and yet before we determine that the condition is practically or undoubtedly due to any particular cause we should be quite sure of the connecting links in the case.

DR. SIMPSON said that he felt that Dr. Moseley had carried the diagnosis of the case as far as was possible. It was one of the most difficult conditions of the throat to diagnose, and one should be very careful before coming to a positive conclusion. In his opinion we should get the best expression of rheumatic involvement of the throat during an attack of acute rheumatism, and we all know how rarely we get such involvement of the throat during such an attack. He questioned whether many of those present had ever seen an acute involvement of the larynx during an acute attack of rheumatism. It seemed to him that if such cases were at all common they would be followed by chronic ankylosis, the same as other joints in the body. Another interesting point that Dr. Moseley had brought out was that the difference between immobility due to paralysis and that due to ankylosis, was simply the difference between non-inflammatory and inflammatory conditions.

DR. FREUDENTHAL said that we sometimes get cases of laryngeal involvement during an attack of rheumatism and it should not then be difficult to make a diagnosis, but the difficulty arises when we have to treat cases that give no history of rheumatism. In referring to the published cases, Dr. Moseley had probably overlooked the cases which he (Dr. Freudenthal) had published ten or twelve years ago. One of these, a girl of 18 or 20, had been treated in the clinic through the winter for ankylosis of the crico-arytenoid

joint. For a long time he had been unable to make a diagnosis of the case. There was no pressure, no tuberculosis, or any thing else. The main symptom was the pain which was very marked and pronounced. Finally he discovered that the girl was suffering with rheumatism, although she had said nothing about it. Treatment in this direction relieved the ankylosis somewhat, though not entirely. It was undoubtedly a case of rheumatic ankylosis. Another case which he had seen during an acute attack was that of a physician now living here. In this instance the rheumatism had affected the epiglottis which was swollen to such a degree, that it was feared tracheotomy would be necessary. However, after giving him salicylate of soda in large and frequent doses, the swelling subsided so that he could breathe freely. He had a similar attack later, but it was in a much milder degree.

DR. DOUGLASS said that when he had been asked to take part in the discussion of this paper it occurred to him that he knew very little about it, and upon looking over the literature he found that apparently few writers had paid any attention to rheumatic inflammation of the crico-arytenoid articulation, although we all know that such a condition exists. Personally, he recalled four cases of fixation of the crico-arytenoid articulation which in the absence of other assignable causes he had designated rheumatic. He saw no reason why they might not be rheumatic, and yet there was really no valid reason why they should be considered such. If we review the diseases of childhood we find children suffering from rickets which is characterized as an inflammation of the chondral articulations at the ribs, but we rarely find the larynx involved in a similar inflammation of the joints in such children. When we remember how rarely this affection of the arytenoids is seen or reported it seems doubtful whether it can be so readily attributed to rheumatism of which one sees so much. In the case reported tonight the diagnosis had been obscured by the fact that in childhood the patient had suffered from a prolonged attack of whooping cough, and from that time was subject to attacks of laryngitis. This case might therefore be gouty or it might equally well be attributed to the attack of whooping cough, which sometimes produces traumatism and fixation of the crico-arytenoid articulation.

DR. MOSELEY, in closing the discussion, said that the discussion had followed just the lines that he had hoped. Dr. Simpson's idea had supported his diagnosis, for the man was supposed to have a rheumatic tendency, whatever that may mean. There was a dis-

tinct attack of gout coincident with an attack in his larynx, and this seemed to indicate that it was a rheumatic or gouty condition. He used the terms here rather indiscriminately, as the whole subject of gout and rheumatism is so indefinite. Replying to Dr. Mayer's query, he had mentioned rheumatism among the possible causes of the condition.

The Technic of the Submucous Resection of the Septum.—By SIDNEY YANKAUER, M.D. (*Published in full in THE LARYNGOSCOPE, page 294, volume XVI.*)

DISCUSSION.

DR. FELIX COHN: I take the liberty of opening the discussion on this splendid paper of Dr. Yankauer's because three years ago I had the honor of reading a paper before this Section on the "Submucous Resection of the Septum" and, in connection with the description of the complete technique of the operation, of presenting seven patients upon whom the submucous resection had been performed, some of the cases having been operated upon in 1893. The operation was originally recommended by Dr. King in 1865. My first resection was performed in 1888. Shortly after my publication of the paper in the Medical Record, Dr. Freer, in a letter to that journal, referred to his reports of the operation and thought that I should in my bibliography have referred also to the American operators who had interested themselves in the operation instead of mentioning only German authors. I did not include Dr. Freer in my bibliography because his report dated from 1901 and I had only referred in my bibliography to the surgeons who had interested themselves in the operation during its early infancy, which included the authors up to the year 1890. This in no wise detracts from the meritorious and energetic work of Dr. Freer, who has certainly done a great deal to introduce the operation in this country and abroad. It happened that only very few, and those German laryngologists only, interested themselves in the resection up to 1890. There were only Petersen, Hartmann, Krieg and Cholewa. Killian who has become identified with the operation since interested himself in it at a later date, 1899; so also Böninghaus and others. The credit of the operation belongs to Krieg, and Krieg only; and if it were a question of priority for the introduction of this operation in this country the priority would really belong to Dr. Frederick Lange, formerly of New York, who first called my attention to it immediately after Krieg's publication in 1886. The great enthusiasm with which the submucous resection

has, however, been received in this country in the last three years is most gratifying and it affords me great pleasure to see that the hope which I expressed in the concluding remarks of my paper, that time would show the superiority of the submucous resection over all other methods in cases of deflected septa, has been so quickly realized.

The operation, however, should only be recommended for cases of curved scoliosis of the septum, cases for which the operation was originally intended by Krieg. Cases of extreme angular deviation, for instance, or exostoses of the septum, should be operated by other and less elaborate methods at our command—the saw, the trephine, etc. If we confine our operations to suitable cases only our results will be uniformly excellent, nor will we for most cases require such an elaborate technical study as has been recommended tonight. The beauty of the Krieg operation is its comparative simplicity, for, although the operation is tedious at times, it is in reality a simple surgical operation. That some of the devised instruments are excellent and almost indispensable is unquestionable, and I for one should like to call especial attention to the "Killian speculum," the "Ballenger knife," the forceps of Dr. Hurd, Dr. Freer's raspatories for separating the mucous membrane from the cartilage. The occurrence of perforations in the series of cases formerly published usually varied from 14 to 20 per cent. This percentage is too high, and there is no doubt that the accidental perforations will gradually decrease as the scientific technique becomes more developed and the cases are more suitably selected. A number of perforations were caused experimentally in varying the methods of separating the mucous membrane. But no matter how great the care, perforations in some cases will be unavoidable, and especially in atypic deviations complicated with an atrophic and an adherent mucous membrane on the concave side. At times, the mucous membrane is so altered that it is transformed into a fibrous tissue covered by so thin a layer of epithelium that perforation must necessarily ensue in the attempt to remove it from the adhering cartilage. There are also cases in which to relieve a patient we must "make an intentional perforation." I refer to those cases in which the vomer and septum are completely deviated so that there is in reality only one nostril suitable for respiration. If in these cases the annoyance suffered by the patient is so great as to require removal of the anterior deviation, a perforation must be made in order to give the patient the desired relief. Although the patient really respire with only one nostril he has the sensation of breathing through the scoliotic side.

In regard to the technique, the best results were obtained with a simple curved incision in front of the line of greatest convexity, occasionally varying the character of the incision according to the exigencies of the case. The recumbent position has also seemed the most comfortable for the operator as well as for the patient. After the operation the nose was usually tamponed for one or two days, and after that the deviation was usually left to take care of itself with excellent results, the patient being given a spray to use two or three times daily for cleaning the nostrils.

DR. EMIL MAYER said that he wished to congratulate Dr. Yankauer on the interesting and valuable paper which he had presented and on the clearness with which each step had been demonstrated with the assistance of the ingenious model of his own making. Dr. Mayer said that he had seen most of the 55 cases to which Dr. Yankauer had alluded in his paper and they included almost every type of deviation and some very extreme ones, all of which had proved to be well suited for this submucous operation. The same procedure and technique has been followed by his other assistants at Mt. Sinai Hospital Dispensary with the same satisfactory results. In none of these 55 cases had there been any perforation. There was no question but that Dr. Cohn was one of the pioneers in this method of operation in this country, but it might be interesting to some of the members to know that although Dr. Krieg had presented his first report of such an operation in 1886, Dr. E. Fletcher Ingals reported a case before the American Laryngological Association in 1882, describing an operation which is practically the same thing, so we may have to go to Chicago to establish the question of priority. The classification of the deviations as presented by Dr. Yankauer appealed to him very strongly, and he thought that if these suggestions were followed in our descriptions, we should be better able to understand each other. He especially liked the description of the superior, inferior, posterior and anterior slopes.

Regarding posture, he himself preferred that the patient should lie down as there was then no strain upon the heart. Dr. Yankauer would probably admit that sometimes during the course of operation the patient showed the effect of the cocaine and appeared pale and was faint. In the recumbent posture this was largely obviated and he had never observed that any greater bleeding resulted. It is not easy, however, to do the operation in this way without assistance; but if a thing was worth doing it was worth doing well and one should get all the assistance necessary to obtain the best results. The operation is practically painless and bloodless.

In regard to perforations, he was willing to stand on record as saying that nearly every perforation is due to failure of technique on the part of the operator, and that if the operation were carefully followed out as described by the speaker this evening there would be few if any perforations.

Another and very important point was the final result of these operations. Have any of us been able to follow up patients upon whom this operation has been performed long enough for them to have received severe blows upon the nose and possibly deformities? Have we learned all about the cases of hematoma or abscess that may follow as the result of such efforts for the removal of this condition? These considerations must give us pause, and while we have reason to believe that in this method of resection we have a very efficient operation and one that has come to stay, and while the pioneers in this line of work deserve great credit, yet at the same time, owing to the great advances which have been made in recent years by some of the younger men who have paid close attention to these conditions, he hoped that we should ere long be able to reach some definite conclusions as to just how far we may proceed to advantage along this line of work.

DR. HURD said that Dr. Yankauer's paper was one of the best that he had ever heard or read on this subject and that his anatomical description was one of the best that had been given. One of the most valuable points which had been brought up was the use of the curette in going through the cartilage to get at the mucous membrane on the other side. That brings up the question of perforation. In the first 50 cases which he himself had operated upon in this way, only one case of perforation occurred, due to the use of a crude pair of bone forceps. Such a result should not occur, and when it did happen it was the fault of the operator. The curette is the secret of not having perforations. Dr. Yankauer had referred to the painlessness of the operation. This was undoubtedly a very strong argument in its favor. Dr. Yankauer had also spoken of punching out the bone with the forceps rather than breaking it out, but he himself preferred to break off as large a piece as possible at each bite of the forceps. The patient would not object to this if reminded of how much more he hears than feels. He always operated in the upright position, and seldom experienced any difficulty with the patients. He had performed this operation 65 times, and never had any assistance. He uses a nasal speculum, devised by himself, which keeps the membranes apart without need of a retractor and presents a good field for operation. He uses Killian's

incision running from the floor up to the dorsum. This causes less hemorrhage than when the incision is extended on to the floor. By this method he could take out all of the deflection through a simple incision of one inch. This did not seem to him to be the difficult part of the operation. He found most difficulty in getting the membrane up along the acute deviation where it was thin. In this step he would often tear the convex membrane, but the concave membrane remained intact and no perforation would result. In all of his cases he had never had one in which the cartilage alone was involved, but in all of them he had removed some bone, and the result was a practically straight septum. Another difficulty which he experienced was in the subsequent packing, and he had had several cases of hematoma. He had used all the methods of packing suggested by Dr. Yankauer, as well as the Bernay Sponge but had not yet found an entirely satisfactory method for this step. He would like very much to see some method devised which would prevent the very uncomfortable night experience by the patient after the operation. He rarely left the packing in after the first night. The forceps presented by Dr. Yankauer were very similar to those which he himself used.

DR. LEDERMAN said that he was very much interested in the very valuable paper presented. He thought it very important to get as free a space as possible in which to work. By curving the incision to the outer wall we get more hemorrhage than by carrying it only along the anterior border of the deflection, but this can be controlled by pressure and adrenalin and we obtain more success and freedom for manipulation. To him the most difficult feature of the operation was going through the septum to elevate the mucous membrane on the opposite side, and here was where he found the most danger of perforation. The curette was certainly the best instrument for this step and gave the least danger. In three cases that he recalled, the septal deflection was adherent to the outer wall but he had been able to leave the adhesion intact until the cartilage and bone was removed and then he separated the adhesion from the turbinate with a pair of scissors. This complication assisted in the technique, as it kept the elevated mucous membrane away from the cartilage during the removal of the latter. The pain after the operation was a very important feature. The patients always complain of a very uncomfortable night, and not being able to sleep on account of pain in the face and around the nose. Of course, where it is necessary to pack both sides of the nose this trouble will necessarily be very great, but if the parts on the side

of the concavity have not been disturbed to any great extent and that side need not be packed, the pain is not so intense. The patients do suffer a great deal the first 24 hours, and relief in this direction will play an important part in future cases. He had heard of a suggestion, of inserting the iodoform in a rubber tissue which does not give so much pressure, and the removal of the packing is not followed by so much bleeding. Since he had been following the method suggested by Dr. Yankauer of extending the incision to the outer wall he had obtained better results than formerly, with less difficulty in the technique. Further observations will permit us to judge whether or not we are justified in removing so much tissue from the nasal support.

DR. A. WIENER said that the writer of the paper had certainly demonstrated that this is a most useful and beneficial measure for the removal of obstructive conditions due to deviated septums. He believed moreover that it would replace many of the former operations, such as the removal of the inferior turbinate for an obstructed condition, which was often done most unwillingly and only when it seemed unavoidable. In regard to the technique, there were a few points he would like to emphasize. First in regard to the incision which Dr. Yankauer makes across the floor of the nose after the incision is made along the front of the septum. He himself had tried this method often, and found it very useful, allowing as it did, the mucous membrane to be retracted and thus furnishing sufficient space within the nose when one is trying to remove the crest and cartilaginous portion of the septum. He differed with Dr. Yankauer, however, in the removal of the crest and the separation of the periosteum, and preferred to remove a small portion of the crest with the chisel, just exposing the edge of the periosteum and then by means of a dull separator passed backwards to separate the periosteum on both sides. He found no difficulty in proceeding in this way. The great difficulty lies in getting the bone away, and he had tried various methods of doing this but they had not proved satisfactory. Recently he had had a pair of forceps constructed by Messrs. Tiemann & Co., which gave very good results. These forceps had a strong leverage in the handle and could be passed around the crest with great ease, and it required only a very slight effort to remove the bony obstruction.

DR. FELIX COHN said he could appease any doubts which might be expressed as to the final outcome of the submucous resection because having observed his patients for so many years he could state there are no evil after-effects nor are there any cases of con-

secutive deformities. It is important, however, to guard against retractions by leaving, in all cases where possible, a small ridge of cartilage parallel to the bridge of the nose. This has been a routine method in all his cases, in order to avoid deformities.

DR. YANKAUER, in closing the discussion, said that something had been said about the patients fainting, but in his experience he found that most of the patients fainted before the operation was commenced. He had seen only one case of real cocaineism. The difficulty in separating the cartilage posteriorly is found in those cases where there is a sharp bend in the cartilage, and in these cases it is advisable to remove the anterior slope first, and then the parts behind the bend. If the packing is left in place for 48 hours there will be fewer cases of hematoma. The only cases of hematoma he had had, occurred when the patients themselves removed the packing within 24 hours.

CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY.

Regular Meeting, March 7, 1906.

OTTO T. FREER, M.D., President.

Some Points on the Anatomy and Physiology of the Tonsil. By

JOHN G. WILSON, M.D., Chicago.

The palatine tonsils are part of a ring of lymph follicles and lymphatic vessels which surrounded the pharynx called "Waldeyer's ring." This ring consists not only of well-defined masses surrounded by a connective tissue capsule, as seen in the pharyngeal tonsil and the faucial tonsil, but also of more or less irregular masses, as in the soft palate, and of continuous layers as at the base of the tongue and round the tube.

The normal size of the faucial tonsil is difficult to estimate owing to the frequency of inflammation in it. A fair average might be, length 20mm., breadth 18mm., thickness 13 mm. The tonsil reaches its maturity about the fifth year. It is covered by a capsule of connective tissue which is, on an average, about 1 mm. thick. In enlargement of the tonsils it has been demonstrated that the connective tissue capsule does not relatively thicken.

In man, the blood supply comes from the facial, either through a tonsillar artery or through the tonsillar branch of the ascending palatine. Branches from the lingual go to the pillars of the fauces and to the plica triangularis. A branch of the descending palatine lies in the soft palate near the supratonsillar fossa.

The tonsillar artery lies between the internal pterygoid muscle and the pharynx in the pterygo-pharyngeal space. This space is of irregular conical form and contains loose, fatty alveolar tissue. The relation of the external and internal carotid arteries to this space renders it impossible to injure them in tonsillar operations. The semi-fluid fat in this space easily enables the operator to pull forward the tonsil so that these arteries are still further removed from chances of injury. Hemorrhage most often comes from the tonsillar artery, but may also come from branches of the lingual.

There is evidence to show that the tonsil cannot be classed as a residual organ.

The physiological function of the tonsil is associated with the active processes at the upper end of the alimentary tract, one of which may well be to act as a defensive barrier to micro-organisms.

**The Indications for Surgical Interference in Disease of the Fau-
cial Tonsils and the Methods of Choice in Operating. An
Analysis of 480 Cases.** By W. E. CASSELBERRY, M.D.,
Chicago, Ill. (*To be published in full in a subsequent issue of
THE LARYNGOSCOPE.*)

**Two Cases of Thrombo-Phlebitis of the Lateral and Sigmoid Si-
nuses. Operation. Recovery.** Presented by J. HOLINGER,
M.D., Chicago, Ill.

Before these papers were discussed, Dr. J. Holinger asked per-
mission to present two patients, both of whom had been operated
upon for thrombo-phlebitis of the lateral and sigmoid sinuses.

In the first case, a boy of five years, the suppurative process
progressed downward to the jugular bulb and vein, which were
opened. The facial nerve was injured as is hardly avoidable in these
cases. The boy had three distinct septic embolisms of the lungs
from the thrombo-phlebitis of the jugular vein and jugular bulb with
fever, pleuritic exudation and coma. Each time he recovered.

The second case, also a boy of 12 years, showed the opposite
progress of suppuration of the thrombo-phlebitis, that is, back-
ward in the course of the sinus towards the occiput.

The cases were so clear, that without any further explanation,
the members were invited to examine the patients.

DISCUSSION ON THE PAPERS OF DRs. WILSON AND CASSELBERRY.

Dr. ARTHUR M. CORWIN: The adenoid tissue included between
the pillars of the fauces, on each side, which we call the faucial
tonsil, should be in prominence little more than several thicknesses
of ordinary mucous membrane; normally it should not project as
a rounded body. When it does, it is abnormal, and the fact that a
large majority of people are abnormal in this regard is attested
by the presence in varying degree of more than this almost invisible
deposit of adenoid tissue. But to say that we should remove all
tonsils simply because they are visible or even moderately enlarged,
is an exaggeration. We should no more think of doing that than
of cutting off every spur or reducing every trivial deflection of
the nasal septum.

The indications, as I see them, for an operation on the tonsil by
one of the many methods in vogue would seem to fall under four
heads. In the first place, we operate on tonsils by whatever method
we select, when there is a history of acute inflammation in the case,
whether the patient be a child or adult; whether the inflammation
is of the type of the ordinary follicular tonsillitis, which is a grave

disease, with its sequel of peritonsillar abscess and dangers of systemic invasion, or whether the inflammation takes a more mild type, frequent, periodic, or occasional, of what is little more than a catarrhal inflammation, superficial in its character without exudate, without follicular involvement, and with little enlargement. We all see many such cases.

In all such instances, the indication is plainly to destroy the seat of disease, the tonsil.

The second indication for operating upon tonsils would be some mechanical obstruction to voice production, as in singers, in students of the voice, in public speakers, and in children who have a throaty, stuffy voice, even without inflammatory trouble or adenoids, the faucial tonsils simply being larger or smaller, and mechanically interfering with phonation.

The third indication for interference is based upon a patient's complaint of bad breath or disagreeable taste or both. How often have we had young ladies come to us with this symptom, foul breath periodically, or most of the time, chiefly periodically? We have inspected carefully the nose, reduced the swelling by cocaine and adrenalin to facilitate inspection in order to eliminate any possible localization of decomposing secretion or caries, and to eliminate also the purulent discharges from the various sinuses. We have inspected carefully the vault of the pharynx. As we all know, there are cases of chronic and persistent accumulations of secretion in this region, which come away in a lump, and may be the source of more or less odor. We have inspected the teeth, the alveolar processes, and we have explored also the lower respiratory tract, to rule out in certain selected cases the presence of bronchiectasis or other bronchial or pulmonary causes of foul breath. We have inquired carefully into the digestive tract; we have excluded the heavily coated tongue as the seat of odor, whether it be the result of digestive trouble, or due to mouth breathing from nasal stenosis, and we have turned our batteries upon the tonsil, not necessarily the large and prominent tonsil, full of follicular openings, but we have made the hidden and seemingly insignificant tonsil look us squarely in the face, so to speak, as if turning it out of its own bed by pressing firmly with the tongue depressor in front of the tonsil while the patient gagged; or we have retracted the anterior pillar with a blunt hook of aluminum wire. We have in this manner possibly in the case of a small tonsil, found no follicular involvement. In the absence of such cryptic localization, the deep fossa referred to in the paper in front of the tonsil may be at fault, is the seat of

decomposing or purulent secretion, and this we find by passing into it a probe or even the right-angle tip of the atomizer. And under the circumstances, these can be best attacked not by the tonsillotome, not by cutting instruments, although each operator has his choice in these matters, but preferably by the galvano-cautery, rightly used.

Lastly, we operate on tonsils because of the danger of infection through them. This is especially so in children, whose adenoid tissue is so succulent and vulnerable; but it also applies to medical students, doctors, and nurses. And no doctor, nurse or medical student should overlook his tonsils as being portals of entry which will subject him to unusual danger. As the tonsil becomes older and more fibrous, the danger becomes less, but correspondingly more from hemorrhage in case of operation.

With regard to the method of operating, the cautery in later years has become more popular with some of us, and is very effective when rightly used. The one rule I seek to apply in using the cautery is not to burn the pillars or the underlying muscular structure surrounding the tonsil. If we do that, we not only cause a greater reaction, but greater pain, for every time the burnt muscle is stretched, there is immense discomfort. Furthermore, if we burn the muscles we will have scar tissue, which will lessen their flexibility and invite deformity. And in order to avoid this, I retract the anterior pillar with a blunt hook. The tonsil may then be fairly enucleated with the cautery or slit up repeatedly from above downward, and the cul de sac laid wide open. In separating the tonsil from the anterior pillar with the cautery in a case of adhesions, it is highly satisfactory to leave the sixteenth of an inch of adenoid tissue along the inner posterior surface of the anterior pillar, which subsequently contracts, but which allows the muscle to go unscathed. I am very fond of the use of the cautery, even in very greatly hypertrophied cases.

Allow me finally to speak briefly of an operation with which you are all more or less familiar, namely, the Ingals operation for the removal of the tonsil by the snare. It is an operation that I should like to dilate on for a considerable time, not because I happen to have been reared in the Ingals school of our specialty and my foundations were laid there, not because the procedure has some man's name tied to it, but because I have found this operation, when compared with many other surgical measures, most satisfactory. It fills the bill perfectly in children; it delivers the goods to the best advantage in some adults. The patient is put under chloroform or

some other anesthetic, the gag inserted with a light, whether reflected or not; the anterior posterior pillar is separated by a proper instrument, and the Ingals tonsil forceps is applied from above downward, and compresses the tonsil between its blades. A cold wire snare, number 5 steel piano wire, is then slid over the locked handles of the forceps and the tonsil is cut off, the loop of the snare being contracted by the milled wheel. The child is on its side, with head over the table and is shifted from one side to the other, the under tonsil being removed with each change of posture. The adenoids can be removed at the same sitting. Dr. Freer has added to this forceps an additional tooth which has an advantage in a small-sized tonsil, in that it will firmly attach itself without slipping.

DR. WILLIAM L. BALLENGER: I shall confine my remarks to a simple statement of a few facts, not attempting to enter into a general discussion of the two very excellent papers.

I want to say, that during the past four years it has been my endeavor to remove every tonsil with its capsule intact, though I have not been able to do so to my satisfaction until within the last six months. During this short period, I have usually removed the tonsil with its capsule or investing membrane intact. A microscopic examination only can show whether it is actually present or not.

I have here a few tonsils I removed in series. They all have the investing membrane intact, or apparently so, except in two instances. The two tonsils were not removed by me, but by another surgeon in this city. I simply have them to compare with those in which the investing capsule is intact.

I have made many observations on the tonsils I have removed, and I have found in nearly every instance that the crypts of the tonsil extend to within a millimeter of the depth of the tonsil; hence it is apparent, that unless we remove the tonsil with its investing membrane, we do not remove the deeper portion of the crypts, where the chief seat of trouble lies, especially in the supratonsillar fossa. When the tonsillotome is used, this portion of the tonsil usually escapes and is left to continue the tonsillar disease.

I will pass the tonsils around, and you will see the appearance of the tonsil when removed in its entirety.

The method of removal is simple. The tonsil is dissected from the tonsillar sinus with a small knife. The tonsil during the dissection is seized by a pair of vulsellum forceps, one prong in the supratonsillar space, and the other at the inferior aspect of the tonsil. It is then drawn forcibly inward and forward toward the median line, pulling it away from the carotid, as shown by Professor Wilson. I

did not fully appreciate before the value of such a procedure; I knew it enabled me to dissect the tonsil more easily. By thus pulling it towards the median line and forward, I pulled it out of its socket or sinus. A large part of the center of the tonsil lies underneath the anterior pillar, and in the supratonsillar fossa, and by pulling towards the median line it comes from its hiding-place, and its attachments are easily reached with a knife. It only takes a few moments to do the necessary dissection. I have been able, in favorable cases, where the patients did not gag, to remove the tonsil in a minute or even less than that time. Ordinarily it takes longer. It is not however, a long operation. The operations I have performed have been chiefly done under cocaine anesthesia. Latterly, I have injected cocaine and adrenalin into the pillars at several points, and into the tonsil, and have thus rendered the operation practically a bloodless and painless one. I am not sure that this is a safe method. I have used it in forty or fifty cases without any untoward results. Dr. Moss, of San Antonio, Texas, suggested this method to me. He has pursued it for a number of years without a dangerous incident, and I have been following it with equally good results for a brief time. I am fearful, however, of injecting cocaine into the tissues.

Anyone who attempts to remove a tonsil in its entirety and succeeds in doing so, in my opinion, is on the right road. There is no more reason why a tonsillectomy should not be considered a true surgical procedure than is an appendectomy. We aural and laryngeal surgeons should endeavor to make our operations surgical in character. We should get away from some of the old machine methods (the guillotine), and get down to true surgical principles in operating, and if we do this we will find that our results will be better, and that we will be more respected as surgeons in our line of work.

DR. CHARLES M. ROBERTSON: In regard to the different methods of enucleating the tonsil, I will try to illustrate the one I employ. Tonsils should be divided into two classes, the obstructive and the diseased, whether it is a long, flat, small or submerged tonsil. The submerged is the worst tonsil we have to deal with. The obstructive tonsil appears usually in children earlier than Dr. Wilson stated. My experience has taught me that the tonsil appears before the fifth year in a great many cases. I have often seen very large glands in children only a few months old. In fact, we find cases at five years of age with very, very much enlarged faucial glands. This is the only kind of tonsil, in my opinion, that indicates the tonsillotome. I do not believe tonsillotomy should be practiced in any other class,

and then only for the relief of the obstruction to deglutition and respiration.

As regards the enucleation of the gland, it makes no practical difference how we enucleate it. Cautery dissection, dissecting with bistoury, the cold snare, are all good operations. My objection to the snare is that we have to dissect the gland very loose before we can put on the snare, and after we get the gland dissected, it is easy to take a snip or two with a pair of shears and get it out without the bother of a snare. My experience teaches me that the snare operation is not always a bloodless one, as often there is serious hemorrhage following its use. The dissection is a little slower than it ought to be, except in cases where there is no adhesion, or practically none between the pillar and the tonsil itself.

In using these various operations, it occurred to me that if I could devise some way by which I could separate the pillar quickly, and introduce scissors to snip out the gland, I would have a model operation. So I have worked on that plan, and desire to show you the instruments I use. Many of you are familiar with these instruments. The first instrument is a curved double-edged bistoury, curved on a radius of one centimeter, sharp on both sides, blunt at the end. This is introduced over the tonsil, and just behind the anterior pillar. Where there are no marked adhesions between the gland and pillar, you can tear loose the tonsil from the anterior pillar. In cases in which there are adhesions, where you cannot tear it loose with this bistoury, I have taken a pair of shears that work on the principle of an alligator forceps; they open horizontally. One blade is applied over the tonsil and behind the anterior pillar. I crowd it down behind the anterior pillar, taking great care not to get into the tonsil itself. If one is not careful, he will leave that seventeenth of an inch of the tonsil that Dr. Corwin was talking about. After you separate the tonsil, its fellow is separated in like manner. In separating the pillars, if you use a general anesthetic and there is hemorrhage, you can wait until the hemorrhage stops. This separating can be done in the first stage of anesthesia. I have used chloroform, never ether, because ether anesthesia takes too long, and my patient is more apt to vomit after it, thereby producing more liability of tearing away the clot and causing more hemorrhage. After the tonsil is separated from the anterior pillar (I pay no attention to the posterior pillar), I try to separate it above from the soft palate. If I do not do this, I have trouble in dragging the tonsil down and in.

I have modified the Pyncheon grasping forceps. This forceps is just as strong with claw teeth in the form of a double tenaculum. It is locked by a spring lock, so that if the patient should jump or move, or the tonsil is soft and flabby, as it often is, the forceps cannot be pulled off. When I get hold of the tonsil with this instrument, I know I have got it for keeps. If I lay down my instrument to get something else, if there is considerable hemorrhage, I know I have got the tonsil on my forceps any time I want it. I have made this instrument in the shape of a double tenaculum, because I have found all other forceps were liable to pull off, and the tonsil would drop down over the larynx, sometimes choking the patient before it could be removed. In grasping the tonsil I take particular pains to get the top of the gland and very well down near the base. I think the results of this operation depend very largely upon how we get hold of the gland. That is the trick or important part of the operation. After I have grasped the tonsil and pulled it well in and down, I fit a pair of shears over it like this (indicating). These are double-pointed shears, and made so that they fit in between the anterior and posterior pillars. You can open the blades wide apart with the least possible motion of the handles. In fitting the tonsil into the shears I make a slight motion with the shears, so that I get the tonsil out into the shears, delivering it by pulling on the forceps and pressing with the shears. Where the gland is high up into the soft tissues, you can often deliver it into the shears like an onion, and then peel it out instead of cutting it out.

One of the speakers said that in the punch operation for the removal of a small tonsil there was serious hemorrhage in some cases. We realize that in a small cicatricial stump we have cicatricial or fibrous tissue. Where we take out a small amount of fibrous tissue, the vessels in that fibrous tissue are held open like a stove-pipe, because they cannot retract the fibrous tissue holding them open, and we therefore have hemorrhage. With the tonsillotome we will have more hemorrhage than if we cut the tonsil out completely. In some cases I have found little arteries spurting blood clear across the pharynx. In these cases I grasp the tissue surrounding the vessel, cut it out, so as to get into the areolar tissue beyond the gland. Then the vessel has a chance to retract and bleeding stops.

In regard to the anesthetic, chloroform is dangerous in these cases because they are all of a lymphatic disposition, and now that we have a new anesthetic in the shape of chloride of ethyl gas, which is very convenient to use, we can give it with safety, and do our work quickly. We can give it continuously. Chloride of ethyl gas

is put up in metal tubes, with screw-top; you can introduce it through the nose. Of course, where there are large obstructive tonsils and adenoids, you first have to introduce it through the mouth, and after through the nose.

As my time for discussion has expired, I shall be pleased to show my method of ethyl anesthesia at a later time.

DR. A. H. ANDREWS: I want to protest against the inference that tonsillectomy is a simple, easy operation. Tonsillotomy is comparatively easy, but tonsillectomy is neither easy nor simple.

Furthermore, I want to speak against one of the older methods of dealing with tonsils, namely, that of putting the cautery electrode in the crypts and then cutting out. I have enucleated a number of tonsils that have been treated in this way, and have found incarcerated cheesy material on the interior of the tonsil which could not get out and which was causing trouble.

DR. JOSEPH C. BECK: I was very much interested in Dr. Cas-selberry's paper, for the particular reason that he alluded to tuberculosis, and recently in reading an article by Dr. Groeber, I find that he has advanced a new idea with regard to tubercular infection from the tonsil to the apex of the lungs directly without going through the circulation or the bronchial route. That is certainly an important point, so far as the pathology of the tonsil is concerned. Wilemintzky, who has followed Groeber's work, in experimenting by injecting colored material into the tonsil and above the tonsil in animals (dogs), found colored particles along the lymphatics, in the lymphatic glands, and down to the apex of the lung into the lung itself, showing us that we may have tubercular infection of the lungs from the tonsil as a very frequent cause. If that occurs in animals and in some post-mortem examinations that have been made in following tubercular infection in the lymphatics, to the apex of the lung, it proves that the tonsil is an atrium of tubercular infection.

Rheumatic conditions have been alluded to, but it is most interesting to hear the statistics of many, particularly those of Pribram, who has found, in eighty per cent of his cases, angina and infection of the tonsil, showing how frequently the tonsil is involved in cases of acute articular rheumatism.

As far as the treatment of the tonsil is concerned, I have practiced as nearly as possible tonsillectomy. I am pleased with the Robertson scissors and cold snare in adult cases. I use a tonsillotome in children without an anesthetic usually, with an assistant holding the child. In adults I have also used a different instrument, that is, a heavy ring

instrument, an ecraseur on the order of a tonsillotome-snare, as devised by Ballenger. It works beautifully, and the tonsil Dr. Ballenger showed you was removed with that instrument.

DR. EDWIN PYNCHON: There has been considerable said about the undesirability of removing tonsils in many cases. I will say, that I have been removing them for a good many years, and I acknowledge, at the present time I operate and remove tonsils which in former years I should not have removed, but I do not recall a case wherein I removed a tonsil without getting beneficial results. I have used the various methods that the different speakers have mentioned. I have used the shears. I have been experimenting with shears sufficiently to get up some original shears different from those of Dr. Robertson or any others I have seen.

No method of operating with any of these cutting instruments is bloodless. We get more or less hemorrhage which obscures the field of vision and increases the difficulty in operating to a considerable degree.

The method of cautery dissection has been touched on by two or three of the speakers, some of whom do not like it. They cannot be expected to like a thing unless they have practiced it. It is the only operation whereby the tonsil can be removed bloodlessly. I cannot always do it bloodlessly. That I acknowledge. I have, however, on several occasions removed a tonsil by cautery dissection without the loss of one drop of blood from the wound. Therefore, I am bound to like the operation because, as I am working in a bloodless field, I can more thoroughly remove the tonsil than if the field is obscured by hemorrhage.

DR. CLARK W. HAWLEY: I rise with a good deal of hesitation to say anything on these papers because I am an oculist rather than a nose or throat man. I want to call your attention to a new anesthetic, somnoform. I believe if you will try it you will like it. I have tried it, and it is the most satisfactory anesthetic I have ever used. You can control the patient until you are through with your work. One of my recent patients was a little child with large polyps in one ear extending clear to the meatus. Some very large tonsils and adenoids had to be removed; I removed them all under somnoform in a most successful manner.

DR. J. FRANK MCKINLEY: I want to say a word or two with reference to tonsillotomy. I would mention cautery dissection simply to condemn it from what I have seen of it. I have seen it resorted to several times. As to the instruments, I have used nearly all of them that are on the market, and recently have come to use

a forceps and bistoury. I believe that a tonsil can be removed to the extent of there being only the sixteenth part of an inch left. This I do not hesitate to leave. In removing large fibrous tonsils, if I am likely to encounter hemorrhage, my practice is to swab the surface with sixty grains of nitrate of silver to the ounce, by means of which I usually control the hemorrhage. I have only had one case of hemorrhage in all the operations I have done. With sixty grains of nitrate of silver to the ounce, swabbing the cut surface, I have had no bad results; the hemorrhage has been controlled. The instruments I use are a blunt-pointed bistoury and Casselberry forceps.

DR. WILLIAM E. CASSELBERRY (closing): I wish, first, on behalf of the laryngologists of this city, to thank Professor Wilson for his very beautiful anatomical preparations which show exactly the arterial supply of the tonsils and the frequent penetration of tonsil tissue into capsule and muscle, phases upon which we have all desired explicit information, such as he has furnished us. I sincerely hope we shall have the plates incorporated in our published proceedings for future reference.

With regard to hemorrhage from the wounding of the pharyngeal artery, I am sure he did not mean to say that the frequent hemorrhages which give operators so much trouble were from that artery. I am certain that in none of the cases of hemorrhage which I referred to was the ascending pharyngeal artery cut. Unless it occupies an anomalous situation, it is too far posterior to be cut except by accident, or by a reckless operator. The tonsillar arteries especially those from the ascending palatine from the facial and their muscular twigs are large enough to bleed copiously in certain subjects. Why they do it in one subject and not in another, we do not know. But a similar disparity is common to other parts of the body.

I did not refer to mechanical obstruction as an indication for operating, because whilst I grant that it is one of the indications with respect to the faucial tonsil, still it belongs especially to the subject of adenoid growths and I wished to avoid that subject in this paper.

With respect to treatment by ignipuncture or galvano-cautery puncture, it is, in my opinion, a valuable means, and yet I believe, where it is expedient so to do, it is better to remove the tonsil or at least that part of the tonsil that is forming the concretions, for the reason that after ignipuncture cicatricial contraction of the orifices occurs and concretions again are formed.

With respect to the different instruments exhibited, any instrument in the hands of a surgeon who is skilled in its use can be employed. Hence the question of the particular instrument is not one of importance except with respect to minimizing the danger of hemorrhage.

The choice between anesthetics carries more weight. I again suggest, unless one is inclined to run more risk than is necessary, to avoid chloroform in these cases. I suggest this for the credit of the operation, and for the credit of the profession, for if you will consult the literature of anesthetic deaths which have taken place from this operation, you will find they were chloroform cases.

Tonsillar hypertrophy is one manifestation of the habitus lymphaticus in which chloroform is known to be dangerous. Ether is the preferable anesthetic; it is a feasible anesthetic, and it is, I believe, the safest anesthetic for these cases.

Some Points in the Anatomy of the Temporal Bone to be Considered in Connection with Mastoiditis following Acute Suppurative Otitis Media. By J. HOLINGER, M.D., Chicago, Ill.

Indications for Operative Interference in Cases of Mastoiditis Associated with Acute Suppurative Otitis Media. By T. M. HARDIE, M.D., Chicago, Ill. (*To be published in full in a subsequent issue of THE LARYNGOSCOPE.*)

DISCUSSION.

DR. JOSEPH C. BECK: With regard to perforation in cases of acute otitis media, with mastoid complications, there is one kind of perforation that I wish to speak of particularly, and that is the projection of the swollen mucous membrane through a small perforation situated high up. In many cases of this type there were grave complications or marked destruction of the mastoid without external manifestations. I believe those are the observations of most men who see these cases.

In regard to the diagnostic point of auscultation of the mastoid antrum, by the Andrews method, I have been sadly disappointed with it, and have found the opposite to be true. I cannot go by that symptom. One case in particular Dr. Andrews saw with me, which at the operating table showed the opposite condition. Other men have told me that this test has been very useful.

DR. HOLINGER (closing): The great variety in the anatomy of the temporal bone is partly dependent upon the general form of the skull. Long skulls have usually pneumatic mastoid processes, while in round skulls all parts are more (so to speak) crowded

together. Among white as well as colored men there are tribes or races who have mostly round, others mostly long skulls. As a race of people with exclusively brachycephalic, i.e., round heads, I find that the Polish have very pronounced round heads, and my experience with them has been such that I should like to caution any of you who may have to operate upon the mastoid processes of these people.

Some time ago I spoke to Professor Kuemmell, in Breslau, about this question, and he was very pronounced in his ideas, because he has had a great deal of experience. Professor Hartmann, of Berlin, ridiculed him. I agreed with Professor Hartmann that I did not believe there was such a pronounced difference. Since then I have had repeated experiences. I found the lateral and sigmoid sinuses less than a millimeter to the rear of the external meatus, and the dura of the temporal lobe less than a millimeter in front of the middle ear and top of the external meatus. I think this suggestion may be of value to some of you.

DR. HARDIE (closing): I expected to be attacked because of my radical views. It has been customary in the past to wait and wait until something happened in these cases of mastoiditis. While I believe it is possible sometimes to operate too early, I think it is better to operate too early than to wait a little too long.

BIBLIOGRAPHY.

1905.

OTOLOGY, RHINOLOGY AND LARYNGOLOGY.

(Supplement No. 1. Continued from page 184.)

It is our purpose to furnish in this Department a complete and reliable record of the world's current literature of Otolaryngology and Rhinology.

Any further omissions which may be noted in this Bibliography will appear as supplements in subsequent issues of THE LARYNGOSCOPE.

Authors noting omissions of their papers will confer a favor by informing the Editor.

I. NOSE AND NASO-PHARYNX.

- BALDWIN, KATE WYLIE. Intra-Nasal Pressure a Cause of Headaches, Diplopia and Other Ocular Disturbances. *THE LARYNGOSCOPE*. Oct., 1905.
- BEHRENS, B. M. Observations on Catarrh and Predisposition, or Reflex versus Catarrh Theory. *THE LARYNGOSCOPE*. Aug., 1905.
- BELLIN AND LEROUX. Congenital Membranous Occlusion of the Choanæ. *Ann. d. mal. de l'oreille du larynx*, etc. Aug., 1905.
- BOBONE, T. Petroleum in the Treatment of Ozaena. *Ann. d. mal. de l'oreille du larynx*, etc. April, 1905.
- BURCHARDT. The Air Current in the Nose under Pathologic Conditions. A Clinical Experimental Study. *Arch. f. Laryngol.*, No. 1, Vol. XVII.
- CANFIELD, R. BISHOP. Three Cases of Trifacial Neuralgia Due to Intra-Nasal Causes and Treated Successfully by Intra-Nasal Methods. *THE LARYNGOSCOPE*. Sept., 1905.
- CARTER, WILLIAM WESLEY. Fibrous Post Nasal Polyp. *THE LARYNGOSCOPE*. June, 1905.
- CHORONSHITZKY, B. Nasal Tamponade. *Monatschr. f. Ohrenh.* Jan., 1905.
- CITELLI, S. A Lymph Gland and a Cyst in the Pharyngeal Tonsil of a Child. *Arch. f. Laryng.*, No. 1, Vol. XVII.
- CLARK, J. PAYSON. Glioma of the Nose. Report of Two Congenital Cases. *Am. Jour. of Med. Sci.* May, 1905.
- DANZIGER, EMIL. Two Cases of Rhinoscleroma. *THE LARYNGOSCOPE*. Dec., 1905.
- FINDER, GEORGE. Local Anæsthetics,—Ozaena. *Berl. klin. Wchnschr.* Feb. 20, 1905.
- FOSTER, E. EDWIN. The Submucous Window Resection of the Nasal Septum. *Jour. Eye, Ear and Throat Dis.* Jan.-Feb., 1905.
- FREER, O. T. Diffuse Infiltration of the Right Side of the Naso-Pharynx with Paresis of Cranial Nerves. *THE LARYNGOSCOPE*. Nov., 1905.
- GLAS, EMIL. The Histology and Genesis of So-Called "Bleeding Polyps" of the Septum. *Arch. f. Laryngol.*, No. 1, Vol. XVII.
- HAJEK, M. A Contribution to the Knowledge of the Intra-epithelial Glands of the Nasal Mucosa. *Arch. f. Laryngol.*, No. 1, Vol. XVII.
- HECHT. An Aberrant Tooth in the Nasal Cavity. *Arch. f. Laryngol.*, No. 1, Vol. XVII.

- HENLE, A. The Treatment of Acute Coryza. *Deutsch. med. Wchnschr.* Jan. 19, 1905.
- HERZFELD, J. Serous Meningitis of Nasal Origin. *Berl. klin. Wchnschr.* Mar. 6, 1905.
- HOLMES, C. R. Proper Position of Patient for Removal of Adenoids Under General Anæsthesia. *THE LARYNGOSCOPE.* May, 1905.
- HOLTZ, B. Exophthalmos and Adenoid Vegetations. *Rev. heb. de Laryngol. d'Otol. et de Rhinol.* July 1, 1905.
- IREDELL, C. L. M. Nasal Catarrh. *Australas. Med. Gaz.* July 20, 1905.
- LOGAN, JAMES E. Syphilis of the Nose and Accessory Sinuses. *THE LARYNGOSCOPE.* Aug., 1905.
- MAGNUS, MARTIN. Congenital, Benign, Intranasal New Growths. *Arch. f. Laryngol.*, No. 3, Vol. XVII.
- MAYER, EMIL. Hemorrhage in Nose and Throat Operations. *THE LARYNGOSCOPE.* Sept., 1905.
- MILLER, F. W. Mucosa of Upper Respiratory Tract—A Plea for More Rational Treatment. *South. Cal. Pract.* Jan., 1905.
- MIODOWSKI, FELIX. The Involvement of the Nasal Mucosa in Septic Conditions; also a Contribution to the Pathogenesis of Persistent Epistaxis. *Arch. f. Laryngol.*, No. 2, Vol. XVII.
- MORRIS, J. H. The Nature and Treatment of Nosebleed. *Med. Fortnightly.* April 10, 1905.
- MYGIND, HOLGER. Lupus Cavi Nasi. A Clinical Investigation. *Arch. f. Laryngol.*, No. 3, Vol. XVII.
- PASCH ERNST. Contribution to Clinical Study of Nasal Tuberculosis. *Arch. f. Laryngol.*, No. 3, Vol. XVII.
- PUTNAM, W. E. Epistaxis. *Med. Era.* April, 1905.
- SCHILLING, RUD. The Bacteriological Diagnosis of Rhinoscleroma (Diphtheria Bacilli in Rhinoscleroma). *Arch. f. Laryngol.* No. 2, Vol. XVII.
- SHIELDS, W. B. Melancholia Relieved by Ethmoidal Operation. *THE LARYNGOSCOPE.* June, 1905.
- STENGER. The Early Diagnosis of Malignant Disease of the Naso-pharynx. *Deutsch. med. Wchnschr.* March 30, 1905.
- TOEPLITZ, MAX, AND KREUDER, HENRY. Rhinoscleroma. *Am. Jour. of Med. Sci.* July, 1905.
- VON TÖVÖLGYI, ELEMER. A New Method of Operation for Hypertrophy of the Turbinates. *Arch. f. Laryngol.*, No. 2, Vol. XVII.
- TRAUTMANN, G., and GEBHART, A. Carcinoma of the Interior of the Nose. With Illustration and Direction for Operation. *Arch. f. Laryngol.*, No. 3, Vol. XVII.
- TSAGYROGLOUS, M. A Case of Lagorrhinos. *Montasschr. f. Ohrenh.* Feb., 1905.

II. MOUTH AND PHARYNX.

- CARTER, WILLIAM WESLEY. A Cyst of the Pharyngeal Tonsil. *THE LARYNGOSCOPE.* Dec., 1905.
- CHORONSHITZKY. The Formation of Sialoliths. *Arch. f. Laryngol.*, No. 3, Vol. XVII.
- CITELLI, S. Ulcerating Carcinoma of the Tonsil. *Arch. f. Laryngol.*, No. 1, Vol. XVII.

- FEIN, JEAN. Ablation of the Pharyngeal Tonsil with a Bayonet-Shaped Adenotome. *Ann. d. mal. de l'oreille du pharynx*, etc. Nov., 1905.
- FEIN, JOHANN. A Leiomyoma of the Palate. *Arch. f. Laryngol.* No. 3, Vol. XVII.
- FRENCH, T. R. Acute Septic Inflammation of the Throat and Neck Improved by Adrenalin Solution. *Brooklyn Med. Jour.* Feb., 1905.
- HEUKING, E. The Cause and Treatment of Dangerous Hemorrhage after Tonsillotomy. *Arch. f. Laryngol.*, No. 1, Vol. XVII.
- KEIPER, GEORGE F. Spontaneous Hemorrhage from an Inflamed Tonsil. *THE LARYNGOSCOPE.* June, 1905.
- KYLE, JOHN J. Cyst of the Thyro-Glossus Duct; Report of a Case. *THE LARYNGOSCOPE.* Nov., 1905.
- MAYER, EMIL. Hemorrhage in Nose and Throat Operations. *THE LARYNGOSCOPE.* Sept., 1905.
- MAYER, MARTIN, and SCHREYER, OSCAR. Vincent's Angina. *Deutsch. med. Wchnschr.* April 20, 1905.
- MEIERHOF, E. L. Safe and Adequate Method for Opening Retro-Pharyngeal Abscesses in Children. *THE LARYNGOSCOPE.* June, 1905.
- MURRAY, WILLIAM R. The Diseased Faucial Tonsil and Its Operative Treatment. *THE LARYNGOSCOPE.* Nov., 1905.
- REUTER, C. Hairy Polyps of the Throat and Their Origin. *Arch. f. Laryngol.*, No. 2, Vol. XVII.
- SEMON, SIR FELIX. Acute Septic Inflammations of the Throat and Neck. *Brooklyn Med. Jour.* Jan., 1905.
- WRIGHT, JONATHAN. Cysts in Lymphoid Tissue, an Exceptional Manifestation of Tonsillar Retrogression. *THE LARYNGOSCOPE.* Sept., 1905.

III. ACCESSORY SINUSES.

- BEVENS, T. PASSMORE. The Comparative Results of Conservative and Radical Methods of Treatment of Disease of the Sphenoid Sinus. *THE LARYNGOSCOPE.* Aug., 1905.
- COAKLEY, C. G. The Frontal Sinus. *THE LARYNGOSCOPE.* Aug., 1905.
- CORDES, HERM. The Treatment of Chronic Empyema of the Antrum of Highmore. *Monatschr. f. Ohrenh.* Jan., 1905.
- CURTIS, H. HOLBROOK. Modern Methods of Accessory Sinus Treatment. *THE LARYNGOSCOPE.* May, 1905.
- CURTIS, H. HOLBROOK. Two Cases of Successful Obliteration of the Frontal Sinus after Repeated Operations. *THE LARYNGOSCOPE.* Sept., 1905.
- DENKER, ALFRED. The Radical Operation for Chronic Empyema of the Antrum. *Arch. f. Laryngol.*, No. 2, Vol. XVII.
- ESCHWEILER. Contribution to the Pathological Anatomy of Empyema of the Accessory Sinuses. I. Pathological Histology of Chronic Empyema of the Frontal Sinus. *Arch. f. Laryngol.*, No. 3, Vol. XVII.
- FARLOW, JOHN W. The Ethmoidal Sinus. *THE LARYNGOSCOPE.* Aug., 1905.
- FREER, O. T. Antrum of Highmore; Removal of Greater Part of Inner Wall for Empyema. *THE LARYNGOSCOPE.* May, 1905.
- GERBER. Change in the Walls of Suppurating Cavities. *Deutsch. med. Wchnschr.* April 6, 1905.

- GERBER. Principles of Treatment of the Maxillary Sinus. *Arch. f. Laryngol.*, No. 1, Vol. XVII.
- GLEGG, WILFRED, and HAY, PERCIVAL. A Case of Empyema of the Posterior Cells with Paralysis of Binocular Movements and Bitemporal Diminution of the Visual Field. *Arch. f. Laryngol.*, No. 3, Vol. XVII.
- GLEITSMANN, J. W. The Sphenoidal Sinus. *THE LARYNGOSCOPE*, Aug., 1905.
- HENRICI. The Technic of Probing the Frontal Sinus. *Arch. f. Laryngol.*, No. 3, Vol. XVII.
- JONES, RICHARD. Acute Inflammation of the Antrum of Highmore, Complicating Influenza. *Australas. Med. Gaz.* Dec. 20, 1905.
- LELAND, G. A. Chronic Empyema of the Antrum of Highmore. *THE LARYNGOSCOPE*, Aug., 1905.
- LEWIS, C. J. AND TURNER, A. LOGAN. Suppuration in the Accessory Sinuses of the Nose: A Bacteriological and Clinical Research. *Edinburgh Med. Jour.* Nov., 1905.
- LOGAN, JAMES E. Syphilis of the Nose and Accessory Sinuses. *THE LARYNGOSCOPE*, Aug., 1905.
- MARTIN, JOHANNES. Closure of the Ostium Maxillare. *Monatschr. f. Ohrenh.* Feb., 1905.
- MENZEL, K. M. Experimental Lavage of the Maxillary Sinus. *Arch. f. Laryngol.* No. 3, Vol. XVII.
- MUNRO, J. C. Psammoma of the Maxillary Sinus, with Report of a Case. *Denver Med. Times.* June, 1905.
- MYLES, ROBERT C. The Maxillary Sinus. *THE LARYNGOSCOPE*, Aug., 1905.
- NEUFELD, LUDWIG. Tuberculosis, Syphilis and Suppuration of the Maxillary Sinus. *Arch. f. Laryngol.* No. 2, Vol. XVII.
- ONODI, A. Disturbances of Vision and Blindness of Nasal Origin, Due to Diseases of the Posterior Accessory Sinuses. *Arch. f. Laryngol.* No. 2, Vol. XVII.
- ONODI, A. Mucocoele of the Ethmoid Sinus. *Arch. f. Laryngol.* No. 3, Vol. XVII.
- POSEY WM. CAMPBELL. Some Ophthalmological Phases of Diseases of the Accessory Sinuses of the Nose. *Jour. Eye, Ear and Throat Dis.* March-April, 1905.
- POTTS, BARTON H. Foreign body in the Maxillary Antrum. *THE LARYNGOSCOPE*, Dec., 1905.
- ROBERTSON, CHARLES M. How Much Attention Should We Give the Middle Turbinate Body in Diseases of the Accessory Sinuses. *THE LARYNGOSCOPE*, Nov., 1905.
- ROE, JOHN O. The Ethmoidal Sinus. *THE LARYNGOSCOPE*, August, 1905.
- SMITH, E. TEMPLE. Double Ethmoidal Suppuration. Operation. Recovery. *Australas. Med. Gaz.* Apr. 20, 1905.
- STOECKEL. The Free Intranasal Opening of the Sphenoidal Sinus With the Drill. *Arch. f. Laryngol.* No. 3, Vol. XVII.

IV. LARYNX AND TRACHEA.

- AHRENT. A Rare Case of Edematous Fibroma of the Larynx. *Arch. f. Laryngol.* No. 1, Vol. XVII.
- AUBIN, E. D. Foreign Body in the Esophagus. *Australas. Med. Gaz.* April 20, 1905.
- BARTH, ERNST. Continuation of the Investigations of Tone-placing (Tonansatz). *Arch. f. Laryngol.* No. 2, Vol. XVII.
- BAUMGARTEN, EGMONT. The Origin of Cysts of the Epiglottis. *Arch. f. Laryngol.* No. 2, Vol. XVII.
- BUKOFZER, M. What is Tone-Placing? *Arch. f. Laryngol.* No. 3, Vol. XVII.
- BURK, W. Report of a Case of Foreign Body Extracted From the Bronchus by Means of the Electro Magnet. *Arch. f. Laryngol.* No. 1, Vol. XVII.
- DE PONTHERE. Chondritis and Perichondritis of the Cricoid, Thyroid and Arttenoid Cartilages, a Complication of Typhoid. Grave Stenosis. Tracheotomy. Recovery. *Ann. d. mal. de Foreill. du Larga, etc.* October, 1905.
- ELSBERG CHAS. A. Foreign Body Removed From the Right Bronchus, Presentation of Patient and History of the Case. *THE LARYNGOSCOPE.* Dec., 1905.
- HARLAND, W. G. B. The Problem of the Treatment of Tuberculosis of the Larynx. *Am. Jour. of Med. Sci.* June, 1905. *St. Louis Med. and Surg. Jour.* July, 1905.
- HARMER, L. The Diagnosis of Inflammatory Growths of the Larynx. *Arch. f. Laryngol.* No. 2, Vol. XVII.
- HEBRICH. A Contribution to the Diagnosis of Tracheal Tumors. *Arch. f. Laryngol.* No. 2, Vol. XVII.
- HÖBLMOSER. Foreign Body in the Larynx. *Wien. klin. Wchnschr.* Mar. 27, 1905.
- IMHOFFER, R. Haematoma Labii Vocalis e Phlebectasia. *Arch. f. Laryngol.* No. 1, Vol. XVII.
- KOHLER, O. A Contribution to the Origin of Cysts of the Epiglottis. *Arch. f. Laryngol.* No. 1, Vol. XVII.
- LOVEJOY, J. F. Foreign Body Retained in Bronchus for Twenty Months. *Australas. Med. Gaz.* May 20, 1905.
- MAKUEN, J. HUDSON. Report and Exhibition of Two Interesting Cases; One a Curious Laryngeal Lesion, and the Other an Unusual Form of Stammering. *THE LARYNGOSCOPE.* June, 1905.
- MCDONALD, E. A. The Prognosis and Treatment of Laryngeal Tuberculosis. *South. Cal. Pract.* Jan., 1905.
- MÖLLER, JÖRGEN. Some Observations Upon the So-Called Prolapsus Ventrliculi Morgagni. *Arch. f. Laryngol.* No. 3, Vol. XVII.
- MOST, A. Tuberculosis of the Anterior Glands of the Larynx and Their Relation to Laryngeal Tuberculosis. *Arch. f. Laryngol.* No. 3, Vol. XVII.
- NOLAN, RUSSELL. A Case of Tracheal Hæmorrhage. *Australas. Med. Gaz.* March 20, 1905.
- NOWOTNY, FRANZ. Tracheal and Bronchial Stenosis. *Arch. f. Laryngol.* No. 2, Vol. XVII.
- PACKARD, FRANCIS R. Syphilitic Manifestations in the Larynx and Trachea. *THE LARYNGOSCOPE.* Aug., 1905.

- PORCHER, W. PEYNE. Rest in the Treatment of Laryngeal and Pulmonary Tuberculosis. *Am. Jour. of Med. Sci.* Sept., 1905.
- ROGERS, JOHN. The Treatment of Chronic Obstruction in the Larynx and Trachea. *Am. Jour. of Med. Sci.* Nov., 1905.
- RUPRECHT, M. Acute Submucous Laryngitis. *Monatschr. f. Ohrenh.* Feb., 1905.
- SKILLERN, ROSS HALL. The Premonitory Symptomatology of Laryngeal Tuberculosis, with Especial Reference to Tuberculous Sublaryngo-tracheitis. *Amer. Med.* July 8, 1905.
- SORGO, JOSEF. The Treatment of Tuberculous Laryngitis by Means of Sunlight and Artificial Light. *Wien. klin. Wchnschr.* Jan. 26, 1905.
- STEIN, OTTO J. A Case of Laryngeal Tuberculosis with Exhibition of Specimen. *THE LARYNGOSCOPE.* Nov., 1905.
- THEISEN, CLEMENT F. An Unusual Case of Laryngeal Syphilis Requiring Tracheotomy. *THE LARYNGOSCOPE.* Sept., 1905.
- WINSLOW, JOHN R. A Case of Membranous Synechia of the Vocal Chords. *Jour. Eye, Ear and Throat Dis.* Nov.-Dec., 1905.
- YANKAUER, SIDNEY. Foreign Body in the Bronchus, Removed with the Aid of the Bronchoscope—Recovery. *Med. Rec.* Feb. 11, 1905.

V. DIPHTHERIA, THYROID GLAND AND ESOPHAGUS.

- AUBIN, E. D. Foreign Body in the Oesophagus. *Australas. Med. Gaz.* April 20, 1905.
- BROSE, L. D. Nasal Diphtheria. *Med. Fortnightly.* Dec. 11, 1905.
- DENKER, ALFRED. The Extraction of Foreign Bodies from the Esophagus and Bronchi by Means of Esophagoscopy and Tracheoscopy. *Arch. f. Laryngol.* No. 1, Vol. XVII.
- MCCOLLOM, JOHN H. Nose and Ear Complications in Diphtheria, Scarlatina and Measles. *THE LARYNGOSCOPE.* Sept., 1903.
- MCGUIRE, STUART. Foreign Bodies in the Oesophagus. *St. Louis Med. Rev.* Dec. 23, 1905.
- WOLFF, LUDWIG. The Relation between Fibrinous Rhinitis and Diphtheria. *Deutsch. med. Wchnschr.* Jan. 12, 1905.

VI. EAR.

- BAERENS, O. F. Defects of Hearing. *Med. Mirror.* Feb., 1905.
- BRYANT, WM. SOHIER. Tinnitus Aurium and Hallucinations of Hearing; or, The Relation of Ear Disease to Auditory Hallucination of the Insane. *Ann. of Otol., Rhinol. and Laryngol.* Sept., 1905.
- BRYANT, W. SOHIER. Treatment of Chronic Purulent Otitis Media, with Illustrative Cases. *Internat. Jour. Surg.* May, 1905.
- BURKNER K. The Treatment of Neuroses of the Ear. *Deutsch. med. Wchnschr.* Jan. 19, 1905.
- DAY, EWING W., AND JACKSON, C. Q. Acute purulent Otitis Media Complicating Typhoid Fever. *THE LARYNGOSCOPE.* Sept., 1905.
- DE LINS, A. Hernia of the Cavum Tympani. *Ann. d. mal. de l'oreille, du larynx, etc.* March, 1905.
- FRIDENBERG, PERCY. The Clinical Significance of Otalgia. *THE LARYNGOSCOPE.* Nov., 1905.

- KOYLE, FRANK H. Pseudokousma. *THE LARYNGOSCOPE*. June, 1905.
- LINHART, C. P. Idiopathic Hemorrhage in the Middle Ear. *THE LARYNGOSCOPE*. June, 1905.
- MÖLLER, JÖRGEN. Some Remarks on Otosclerosis Based on a Case Discovered at Autopsy. *Ann. d. mal. de l'oreille, du larynx, etc.* March, 1905.
- RANDALL, B. ALEX. Notes on Otitic Epilepsy. *Am. Jour. of Med. Sci.* Aug., 1905.
- SHAMBAUGH, GEO. E. Communication between the Blood Vessels of the Membranous Labyrinth and Endosteum and those Found in the Bony Capsule of the Labyrinth. *Zeitsch. f. Ohrenh.* Vol. L, 1905. *Arch. of Otol.* No. 6, Vol. XXXIV.
- SPENCER, SELDEN. The Use and Abuse of the Syringe in Aural Practice. *St. Louis Cour. Med.* Dec., 1905.
- TOD, HUNTER F. Middle Ear Suppuration and Its Complications. *THE LARYNGOSCOPE*. May, 1905.

VII. MASTOID AND CEREBRAL COMPLICATIONS.

- BAILEY, HAROLD. A Case of Bilateral Extra-Dural Abscess Complicating Middle Ear Suppuration Following Typhoid Fever. *THE LARYNGOSCOPE*. Dec., 1905.
- BAKER, FRED. Report of Cases Simulating Grave Mastoiditis. *Calif. State Jour. Med.* Feb., 1905.
- BARNHILL, JOHN F. Surgery of Otitic Brain Abscess. *THE LARYNGOSCOPE*. June, 1905.
- BRAISLIN WM. C. Acute Mastoiditis, Septic Infection of the Sigmoid Sinus, Phlebitis of the Internal Jugular in a Child. *THE LARYNGOSCOPE*. June, 1905.
- DENCH, EDWARD BRADFORD. Report of Two Fatal Cases of Brain Abscess. *Am. Jour. of Med. Sci.* Aug., 1905.
- HAWKINS, G. T. The Radical Mastoid Operation. Illustrated by Five Living Exhibits Showing Result of Treatment. *Australas. Med. Gaz.* May 20, 1905.
- HASTINGS, HILL. Cerebral Abscess of Otitic Origin. Operation. Apparent Recovery. Relapse. Operation. Death. Autopsy. *Calif. State Jour. Med.* Oct., 1905.
- HITZ, HENRY B. Double Mastoiditis Complicated by an Intercommunicating Suboccipital Abscess. *Arch. of Otolaryngology*. No. 6, 1905.
- HUBBARD, THOMAS. Obstruction of the Eustachian Tube a Factor in the Post-Operative Mastoid Fistula and in Chronic Suppuration of the Middle Ear. *THE LARYNGOSCOPE*. Sept., 1905.
- JACK, F. L. Encephalitis and Brain Abscess. *THE LARYNGOSCOPE*. July, 1905.
- JACKSON, CHEVALIER. The Mastoid Operation. *THE LARYNGOSCOPE*. May, 1905.
- JACKSON, CHEVALIER. Two Cases of Lateral and Sigmoid Sinus Thrombosis, One with Large Jugular Resection. Recovery, Etc. *St. Louis Med. Rev.* March 25, 1905.
- KLAER, GOTTLIEB. A Case of Epidural Abscess of the Temporal Region and Abscess of the Frontal Lobe; Operation; Recovery. *THE LARYNGOSCOPE*. Nov., 1905.
- KEIPER, GEO. F. Tine of a Steel Fork Thrust Through the Left Upper Eyelid, Eyeball, and through the Antrum of Highmore. There for Fourteen Years. Removal. No Reaction. *Ophthalmic Record*. Sept., 1905.

- KNAPP, H. Technique of Opening an Otogenic Cerebral Abscess and Its After-Treatment. *Ann. d. mal. de l'oreille, du larynx, etc.* Jan., 1905.
- MAHU. The Simplest Method of Dressing the Mastoid. *Ann. d. mal. de l'oreille, du larynx, etc.* July, 1905.
- PASSOW. The Physiology of the Labyrinth. *Berl. klin. Wchnschr.* Jan. 2 and Jan. 9, 1905.
- SHAMBAUGH, GEO. E. The Indications for Opening the Mastoid Process in Cases of Acute Empyema of the Cells when there is an Absence of Signs over the External Surface of the Mastoid. *Illinois State Med. Jour.* No. 1, Vol. VIII.
- STENGEL. Traumatic Neuroses of the Labyrinth. *Deutsch. med. Wchnschr.* Jan. 12, 1905.
- WELLS, WALTER A. Acute Mastoiditis and the Mastoid Operation in Children. *THE LARYNGSCOPE.* May, 1905.

VIII. THERAPY.

- ANDERSON, WILLIS S. Passing of the Galvano-Cautery in Treatment of Diseases of the Nose. *THE LARYNGSCOPE.* June, 1905.
- BECK, JOSEPH C. Tympanic Massage: A New Method by Means of Metallic Mercury. *THE LARYNGSCOPE.* Dec., 1905.
- BROWN, EDGAR D. Experiments on Animals with Ethyl Chloride. *THE LARYNGSCOPE.* Nov., 1905.
- IGLAUER, SAMUEL. The Treatment of Atrophic Rhinitis by Means of an Oro-Nasal Canula. *THE LARYNGSCOPE.* Oct., 1905.
- LEVY, ROBT C. The Treatment of Asthma. *Denver Med. Times.* July, 1905.
- LOEWENBERG, RICHARD. The Anesthesia of the Mucous Membrane of the Upper Respiratory Passages. *Arch. f. Laryngol.* No. 2, Vol. XVII.
- MADER, L. Radiotherapy in Chronic Inflammation of the Maxillary Sinus. *Arch. f. Laryngol.* No. 2, Vol. XVII.
- NEUBORN, ROB. Ethyl Chloride Anesthesia in Ear, Nose, and Throat Practice. *Arch. f. Laryngol.* No. 1, Vol. XVII.
- RICHARDS, GEORGE L. The Non-Operative Treatment of Chronic Otitis Media Purulenta with Special Reference to the Use of Pyoktanin. *THE LARYNGSCOPE.* Sept., 1905.
- RÖMER, PAUL H. Dyalized Diphtheria Toxin. *Berl. klin. Wchnschr.* Feb. 20, 1905.
- SONDERMANN, R. Further Experiences with My Nasal Suction Apparatus. *Arch. f. Laryngol.* No. 3, Vol. XVII.
- SPIESS, GUSTAV. The Therapeutic Application of Negative Pressure (Suction) in the Treatment of Dry and Atrophic Catarrh of the Nose and Throat. *Arch. f. Laryngol.* No. 2, Vol. XVII.
- STEIN, O. J. Formalin in the Treatment of Diseases of the Ear, Nose and Throat. *THE LARYNGSCOPE.* Nov., 1905.

IX. NEW INSTRUMENTS.

- FREER, OTTO. A Modification of Grünwald's Forceps Adapted to the Window Resection of Bony Deflections of the Septum. *Arch. f. Laryngol.* No. 1, Vol. XVII.
- HECHT. A Flexible Cotton Carrier for the Canal of the Frontal Sinus. *Arch. f. Laryngol.* No. 1, Vol. XVII.
- HURD, L. M. Elevator, Speculum and Forceps for Use in the Sub-Mucous Resection of the Nasal Septum. *THE LARYNGSCOPE.* Dec., 1905.

- VON ZUR MUHLEN, A. A Modification of Krause's Polyp Snare. *Arch. f. Laryngol.* No. 2, Vol. XVII.
- PYNCHON, EDWIN. Some Improved Nose, Throat and Ear Instruments. *THE LARYNGOSCOPE.* Feb., 1905.
- URBANTSCHITSCH, ERNST. Some New Instruments. *Monatschr. f. Ohrenh.* Jan., 1905.

X. MISCELLANEOUS.

- AMBROSE, T. A Case of Meniere's Disease. *Australas. Med. Gaz.* May 20, 1905.
- BISHOP, S. S. Catarrhal and Gouty Conditions. (In Relation to Nose and Throat.) *Med. Mirror.* Jan., 1905.
- CORNET, P. Congenital Microtia of the Right Auricle without Imperforation of the Auditory Canal. Hemiplegia of the Velum Palati on the Same Side, and Atrophy of the Eustachian Orifice. *Ann. d. mal. de l'oreille, du larynx, etc.* July, 1905.
- DUPUY, HOMER. The Falsetto or Eunuchoid Voice. *THE LARYNGOSCOPE.* June, 1905.
- ESCHWEILER. The Histologic Relations of Paraffin in Living Human Tissue. *Arch. f. Laryngol.* No. 1, Vol. XVII.
- GRAEF, CHARLES. Plan to Avoid Heating the Mirror of the Laryngoscope. *THE LARYNGOSCOPE.* June, 1905.
- HENRICHSSEN, JOH. Observations upon Penetrating Incised Wounds of the Neck. *Arch. f. Laryngol.* No. 2, Vol. XVII.
- HEYMAN, P. Manuel Garcia and the Invention of the Laryngoscope. *Berl. klin. Wchnschr.* May 27, 1905.
- KILMER, T. D. Hematoma of the Sterno-cleido-mastoid Muscle; A Study of Three Cases. *Med. Rec.* Feb. 27, 1905.
- LANGE, VICTOR. An Unexplained Case of Sudden Death. *Monatsschr. f. Ohrenh.* Feb., 1905.
- LANNOIS M. Recurrent Facial Paralysis of Otic Origin. *Ann. d. mal. de l'oreille et du larynx, etc.* July, 1905.
- LEROUX, R. Anatomical and Clinical Researches on the Changes of the Spinal Accessory Nerve of Otic Origin. *Ann. d. mal. de l'oreille du larynx, etc.* April, 1905.
- LOEB, HANAU W. Jurisprudence of the Nose, Throat and Ear. *THE LARYNGOSCOPE.* Oct., 1905.
- MAKUEN, G. HUDSON. Retarded Development of Speech in Young Children. *Penn. Med. Jour.* June, 1905.
- MAKUEN, G. HUDSON. Speech Training as a Factor in the Development of the Feeble Mind. *Amer. Med.* Dec. 2, 1905.
- PHILLIPS, WENDELL C. Melanotic Sarcoma with Manifestations in the Nose, Naso-Pharynx, Mouth, Pharynx and Larynx. *THE LARYNGOSCOPE.* June, 1905.
- PRAUSSNITZ, C. The Hay-Fever Toxin and Antitoxin. *Berl. klin. Wchnschr.* Feb. 27, 1905.
- PREOBRASHENSKY, S. S. The Roll of the Nose, Throat and Larynx in Hemoptysis. Pharyngitis Hemorrhagica. *Arch. f. Laryngol.* No. 1, Vol. XVII.
- SMITH, HARMON. Report of the Garcia Jubilee Celebration Held in London, March 17, 1905. *THE LARYNGOSCOPE.* Sept., 1905.
- SMITH, S. MACCUEN. Meningitis, Its Symptomatology, Diagnosis and Treatment. *THE LARYNGOSCOPE.* July, 1905.
- STUCKY, J. A. Syphilitic Manifestations in Naso-Pharynx, Ear and Buccal Cavity. *THE LARYNGOSCOPE.* Aug., 1905.

